TECHNICAL & SERVICE MANUAL

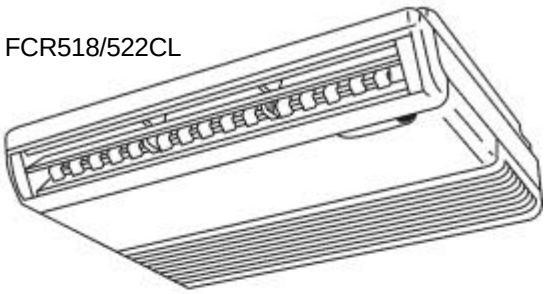
Indoor Unit
FCR518/522CL
AWR518/522CL

Outdoor Unit
AER518SC3
AER518SCL3
AER522SC3
AER522SCL3

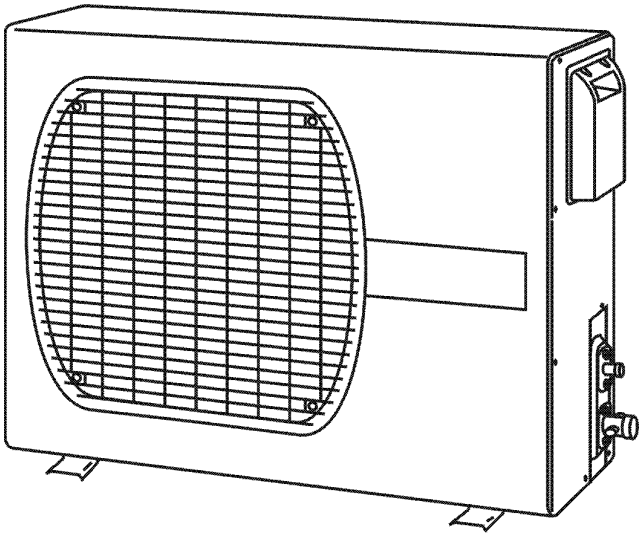
SPLIT SYSTEM AIR CONDITIONER

● Ceiling-Mounted

FCR518/522CL

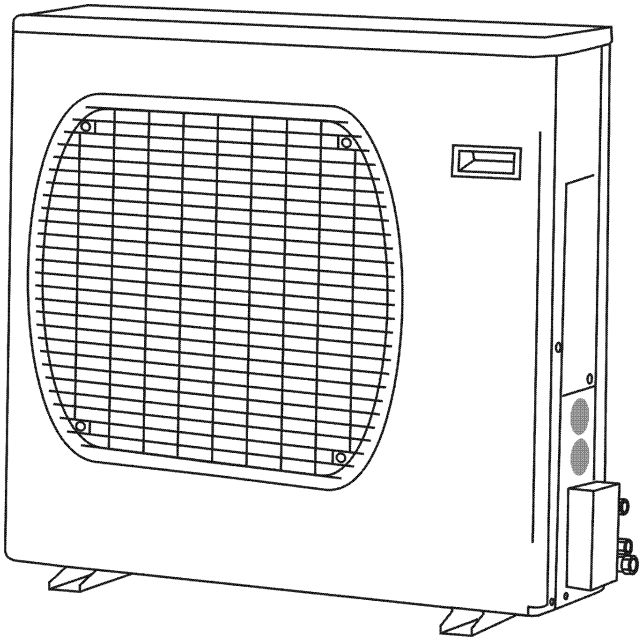


AER518SC3
AER518SCL3

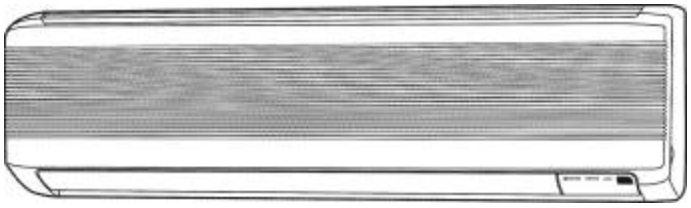


● Floor-Mounted

AER522SC3
AER522SCL3



AWR518/522CL



Important!

Please Read Before Starting

This air conditioning system meets strict safety and operating standards. As the installer or service person, it is an important part of your job to install or service the system so it operates safely and efficiently.

For safe installation and trouble-free operation, you must:

- Carefully read this instruction booklet before beginning.
- Follow each installation or repair step exactly as shown.
- Observe all local, state, and national electrical codes.
- Pay close attention to all warning and caution notices given in this manual.

WARNING **This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.**

CAUTION **This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.**

If Necessary, Get Help

These instructions are all you need for most installation sites and maintenance conditions. If you require help for a special problem, contact our sales/service outlet or your certified dealer for additional instructions.

In Case of Improper Installation

The manufacturer shall in no way be responsible for improper installation or maintenance service, including failure to follow the instructions in this document.

Special Precautions

WARNING When Wiring

ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. ONLY A QUALIFIED, EXPERIENCED ELECTRICIAN SHOULD ATTEMPT TO WIRE THIS SYSTEM.

- Do not supply power to the unit until all wiring and tubing are completed or reconnected and checked.
- Highly dangerous electrical voltages are used in this system. Carefully refer to the wiring diagram and these instructions when wiring. Improper connections and inadequate grounding can cause accidental injury or death.
- Ground the unit following local electrical codes.
- Connect all wiring tightly. Loose wiring may cause overheating at connection points and a possible fire hazard.

When Transporting

Be careful when picking up and moving the indoor and outdoor units. Get a partner to help, and bend your knees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on the air conditioner can cut your fingers.

When Installing…

…In a Ceiling or Wall

Make sure the ceiling/wall is strong enough to hold the units weight. It may be necessary to construct a strong wood or metal frame to provide added support.

…In a Room

Properly insulate any tubing run inside a room to prevent “sweating” that can cause dripping and water damage to walls and floors.

…In Moist or Uneven Locations

Use a raised concrete pad or concrete blocks to provide a solid, level foundation for the outdoor unit. This prevents water damage and abnormal vibration.

…In an Area with High Winds

Securely anchor the outdoor unit down with bolts and a metal frame. Provide a suitable air baffle.

…In a Snowy Area (for Heat Pump-type Systems)

Install the outdoor unit on a raised platform that is higher than drifting snow. Provide snow vents.

When Connecting Refrigerant Tubing

- Use the flare method for connecting tubing.
- Apply refrigerant lubricant to the matching surfaces of the flare and union tubes before connecting them, then tighten the nut with a torque wrench for a leak-free connection.
- Check carefully for leaks before starting the test run.

When Servicing

- Turn the power off at the main power box (mains) before opening the unit to check or repair electrical parts and wiring.
- Keep your fingers and clothing away from any moving parts.
- Clean up the site after you finish, remembering to check that no metal scraps or bits of wiring have been left inside the unit being serviced.

Others

CAUTION

- Ventilate any enclosed areas when installing or testing the refrigeration system. Escaped refrigerant gas, on contact with fire or heat, can produce dangerously toxic gas.
- Confirm upon completing installation that no refrigerant gas is leaking. If escaped gas comes in contact with a stove, gas water heater, electric room heater or other heat source, it can produce dangerously toxic gas.

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1. OPERATING RANGE

	Temperature	Indoor Air Intake Temp.	Outdoor Air Intake Temp.
Cooling	Maximum	32°C D.B. / 23°C W.B.	43°C D.B.
	Minimum	19°C D.B. / 14°C W.B.	19°C D.B.(*)

(*) SCL Models : -15°C D.B.

2. SPECIFICATIONS

2-1. Unit Specifications

Indoor Unit **AWR518CL**
Outdoor Unit **AER518SC3**

Power Surce.....Voltage Rating				400V - 3N - 50Hz .. ....400 V	
Control Circuit			V	230 V 50 Hz	
Performance				Cooling	
	Capacity		kW	5.1	
			BTU/h	17400	
	Air circulation (High)		m^3/h	760	
	Moisture removal (High)		Liters/h	2.3	
Electrical Rating	Available voltage range		V	342 to 418	
	Running amperes		A	3.7	
	Power input		W	2100	
	Power factor		%	82	
	C.O.P.		W/W	2.4	
	Compressor locked rotor amperes		A	21.5	
Features	Controls / Temperature control			Microprocessor / I.C. thermostat	
	Control unit			Wireless remote control unit	
	Timer			ON/OFF 24 hours & Daily program, 1-hour OFF	
	Fan speeds		Indoor / Outdoor	3 and Auto / Auto(Hi,LO)	
	Airflow direction (Indoor)		Horizontal	Manual	
			Vertical	Auto	
	Air filter			Washable	
	Compressor			Rotary (Hermetic)	
	Refrigerant / Amount charged at shipment		g	R407c/ 1840	
	Refrigerant control			Capillary tube	
	Noise Power Level	Indoor – Hi / Me / Lo	dB-A	55 / 51 / 49	
		Outdoor – Hi	dB-A	64	
	Refrigerant tubing connections			Flare type	
	Max. allowable tubing length at shipment		m	7.5	
	Refrigerant tube diameter	Narrow tube	mm (in.)	6.35 (1/4)	
		Wide tube	mm (in.)	12.7 (1/2)	
Dimensions & Weight				Indoor Unit	Outdoor Unit
	Unit dimensions	Height	mm	285	630
		Width	mm	995	830
		Depth	mm	206	305
	Package dimensions	Height	mm	276	713
		Width	mm	1,070	994
		Depth	mm	363	413
	Weight	Net	kg	12.0	52
		Shipping	kg	15.0	57
	Shipping volume		m^3	0.11	0.29

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Remarks: Rating conditions are:
Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.
Outdoor air temperature 35°C D.B. / 24°C W.B.

Indoor Unit **AWR522CL**
Outdoor Unit **AER522SC3**

Power Source..... Voltage Rating				400V - 3N - 50Hz..... 400 V	
Control Circuit				230 V 50 Hz	
Performance				Cooling	
	Capacity		kW	6.15	
			BTU/h	21000	
	Air circulation (High)		m^3/h	830	
	Moisture removal (High)		Liters/h	3.3	
Electrical Rating	Available voltage range		V	342 to 418	
	Running amperes		A	4.8	
	Power input		W	2800	
	Power factor		%	84	
	C.O.P.		W/W	2.20	
	Compressor locked rotor amperes		A	28	
Features	Controls / Temperature control			Microprocessor / I.C. thermostat	
	Control unit			Wireless remote control unit	
	Timer			ON/OFF 24 hours & Daily program, 1-hour OFF	
	Fan speeds		Indoor / Outdoor	3 and Auto / Auto(Hi, Lo)	
	Airflow direction (Indoor)		Horizontal	Manual	
			Vertical	Auto	
	Air filter			Washable	
	Compressor			Rotary (Hermetic)	
	Refrigerant / Amount charged at shipment		g	R407c / 2,450	
	Refrigerant control			Capillary tube	
	Noise Power Level	Indoor – Hi / Me / Lo	dB-A	58 / 55 /52	
		Outdoor – Hi	dB-A	67	
	Refrigerant tubing connections			Flare type	
	Max. allowable tubing length at shipment		m	7.5	
	Refrigerant tube diameter	Narrow tube	mm (in.)	6.35 (1/4)	
		Wide tube	mm (in.)	15.88(5/8)	
	Refrigerant tube kit/accessories			Optional/Hanging wall bracket	
Dimensions & Weight				Indoor Unit	Outdoor Unit
	Unit dimensions	Height	mm	285	835
		Width	mm	995	850
		Depth	mm	206	305
	Package dimensions	Height	mm	276	913
		Width	mm	1,070	1000
		Depth	mm	363	400
	Weight	Net	kg	12.0	67.0
		Shipping	kg	15.0	76.0
	Shipping volume		m^3	0.11	0.37

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Remarks: Rating conditions are:
Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.
Outdoor air temperature 35°C D.B. / 24°C W.B.

Indoor Unit **AWR518CL**
Outdoor Unit **AER518SCL3**

Power Source.....Voltage Rating				400V - 3N - 50Hz .. ....400 V	
Control Circuit			V	230 V 50 Hz	
Performance				Cooling	
	Capacity		kW	5.0	
			BTU/h	17100	
	Air circulation (High)		m^3/h	760	
	Moisture removal (High)		Liters/h	2.3	
Electrical Rating	Available voltage range		V	342 to 418	
	Running amperes		A	3.6	
	Power input		W	2000	
	Power factor		%	80	
	C.O.P.		W/W	2.5	
	Compressor locked rotor amperes		A	21.5	
Features	Controls / Temperature control			Microprocessor / I.C. thermostat	
	Control unit			Wireless remote control unit	
	Timer			ON/OFF 24 hours & Daily program, 1-hour OFF	
	Fan speeds		Indoor / Outdoor	3 and Auto / Auto(Hi,LO)	
	Airflow direction (Indoor)		Horizontal	Manual	
			Vertical	Auto	
	Air filter			Washable	
	Compressor			Rotary (Hermetic)	
	Refrigerant / Amount charged at shipment		g	R407c/ 1710	
	Refrigerant control			Capillary tube	
	Noise Power Level	Indoor – Hi / Me / Lo	dB-A	55 / 51 / 49	
		Outdoor – Hi	dB-A	64	
	Refrigerant tubing connections			Flare type	
	Max. allowable tubing length at shipment		m	7.5	
	Refrigerant tube diameter	Narrow tube	mm (in.)	6.35 (1/4)	
		Wide tube	mm (in.)	12.7 (1/2)	
Dimensions & Weight				Indoor Unit	Outdoor Unit
	Unit dimensions	Height	mm	285	630
		Width	mm	995	830
		Depth	mm	206	305
	Package dimensions	Height	mm	276	713
		Width	mm	1,070	994
		Depth	mm	363	413
	Weight	Net	kg	12.0	52
		Shipping	kg	15.0	57
	Shipping volume		m^3	0.11	0.29

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Remarks: Rating conditions are:
Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.
Outdoor air temperature 35°C D.B. / 24°C W.B.

Indoor Unit **AWR522CL**
Outdoor Unit **AER522SCL3**

Power Source..... Voltage Rating				400V - 3N - 50Hz..... 400 V	
Control Circuit				230 V 50 Hz	
Performance				Cooling	
	Capacity		kW	6.15	
			BTU/h	21000	
	Air circulation (High)		m^3/h	830	
	Moisture removal (High)		Liters/h	3.3	
Electrical Rating	Available voltage range		V	342 to 418	
	Running amperes		A	4.8	
	Power input		W	2800	
	Power factor		%	84	
	C.O.P.		W/W	2.20	
	Compressor locked rotor amperes		A	28	
Features	Controls / Temperature control			Microprocessor / I.C. thermostat	
	Control unit			Wireless remote control unit	
	Timer			ON/OFF 24 hours & Daily program, 1-hour OFF	
	Fan speeds		Indoor / Outdoor	3 and Auto / Auto(Hi, Lo)	
	Airflow direction (Indoor)		Horizontal	Manual	
			Vertical	Auto	
	Air filter			Washable	
	Compressor			Rotary (Hermetic)	
	Refrigerant / Amount charged at shipment		g	R407c / 2,410	
	Refrigerant control			Capillary tube	
	Noise Power Level	Indoor – Hi / Me / Lo	dB-A	58 / 55 /52	
		Outdoor – Hi	dB-A	67	
	Refrigerant tubing connections			Flare type	
	Max. allowable tubing length at shipment		m	7.5	
	Refrigerant tube diameter	Narrow tube	mm (in.)	6.35 (1/4)	
		Wide tube	mm (in.)	15.88(5/8)	
	Refrigerant tube kit/accessories			Optional/Hanging wall bracket	
Dimensions & Weight				Indoor Unit	Outdoor Unit
	Unit dimensions	Height	mm	285	835
		Width	mm	995	850
		Depth	mm	206	305
	Package dimensions	Height	mm	276	913
		Width	mm	1,070	1000
		Depth	mm	363	400
	Weight	Net	kg	12.0	67.0
		Shipping	kg	15.0	76.0
	Shipping volume		m^3	0.11	0.37

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Remarks: Rating conditions are:
Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.
Outdoor air temperature 35°C D.B. / 24°C W.B.

Indoor Unit **FCR518CL**
Outdoor Unit **AER518SC3**

Power Surce.....Voltage Rating				400V - 3N - 50Hz .. ....400 V	
Control Circuit				230 V 50Hz	
Performance				Cooling	
	Capacity		kW	5.0	
			BTU/h	17100	
	Air circulation (High)		m^3/h	800	
	Moisture removal (High)		Liters/h	2.3	
Electrical Rating	Available voltage range		V	342 to 418	
	Running amperes		A	3.6	
	Power input		W	2000	
	Power factor		%	80	
	C.O.P.		W/W	2.50	
	Compressor locked rotor amperes			21.5	
Features	Controls / Temperature control			Microprocessor / I.C. thermostat	
	Control unit			Wireless remote control unit	
	Timer			ON/OFF 24 hours & Daily program, 1-hour OFF	
	Fan speeds		Indoor / Outdoor	3 and Auto / Auto (Hi, Lo)	
	Airflow direction (Indoor)		Horizontal	Manual	
			Vertical	Auto	
	Air filter			Washable, Anti-Mold	
	Compressor			Rotary (Hermetic)	
	Refrigerant / Amount charged at shipment		g	R407c / 1710	
	Refrigerant control			Capillary tube	
	Noise Power Level	Indoor – Hi	dB-A	59	
		Outdoor – Hi	dB-A	64	
	Refrigerant tubing connections			Flare type	
	Max. allowable tubing length at shipment		m	10	
	Refrigerant tube diameter	Narrow tube	mm (in.)	6.35 (1/4)	
		Wide tube	mm (in.)	12.7 (1/2)	
	Refrigerant tube kit			Optional	
Dimensions & Weight				Indoor Unit	Outdoor Unit
	Unit dimensions	Height	mm	680	630
		Width	mm	900	830
		Depth	mm	190	305
	Package dimensions	Height	mm	813	713
		Width	mm	1011	994
		Depth	mm	296	413
	Weight	Net	kg	23.5	52.0
		Shipping	kg	30.0	57.0
	Shipping volume		m^3	0.24	0.29

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Remarks: Rating conditions are:
Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.
Outdoor air temperature 35°C D.B. / 24°C W.B.

Indoor Unit **FCR522CL**
Outdoor Unit **AER522SC3**

Power Surce.....Voltage Rating				400V - 3N - 50Hz .. ....400 V	
Control Circuit			V	230 50Hz	
Performance				Cooling	
	Capacity		kW	6.15	
			BTU/h	21000	
	Air circulation (High)		m^3/h	900	
	Moisture removal (High)		Liters/h	3.3	
Electrical Rating	Available voltage range		V	342 to 418	
	Running amperes		A	4.8	
	Power input		W	2800	
	Power factor		%	84	
	C.O.P.		W/W	2.2	
	Compressor locked rotor amperes		A	28	
Features	Controls / Temperature control			Microprocessor / I.C. thermostat	
	Control unit			Wireless remote control unit	
	Timer			ON/OFF 24 hours & Daily program, 1-hour OFF	
	Fan speeds		Indoor / Outdoor	3 and Auto / Auto (Hi, Lo)	
	Airflow direction (Indoor)		Horizontal	Manual	
			Vertical	Auto	
	Air filter			Washable,Anti - mold	
	Compressor			Rotary (Hermetic)	
	Refrigerant / Amount charged at shipment		g	R407c / 2,410	
	Refrigerant control			Capillary tube	
	Noise Power Level	Indoor – Hi	dB-A	60	
		Outdoor – Hi	dB-A	67	
	Refrigerant tubing connections			Flare type	
	Max. allowable tubing length at shipment		m	10	
	Refrigerant tube diameter	Narrow tube	mm (in.)	6.35 (1/4)	
		Wide tube	mm (in.)	15.88 (5/8)	
	Refrigerant tube kit / Accessories			Optional / Hanging wall bracket	
Dimensions & Weight				Indoor Unit	Outdoor Unit
	Unit dimensions	Height	mm	680	835
		Width	mm	900	850
		Depth	mm	190	305
	Package dimensions	Height	mm	813	913
		Width	mm	1011	1000
		Depth	mm	296	400
	Weight	Net	kg	23.5	67.0
		Shipping	kg	30.0	76.0
	Shipping volume		m^3	0.24	0.37

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Remarks: Rating conditions are:
Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.
Outdoor air temperature 35°C D.B. / 24°C W.B.

Indoor Unit **FCR518CL**
Outdoor Unit **AER518SCL3**

Power Surce.....Voltage Rating				400V - 3N - 50Hz .. ....400 V	
Control Circuit				230 V 50Hz	
Performance				Cooling	
	Capacity		kW	5.0	
			BTU/h	17100	
	Air circulation (High)		m^3/h	800	
	Moisture removal (High)		Liters/h	2.3	
Electrical Rating	Available voltage range		V	342 to 418	
	Running amperes		A	3.6	
	Power input		W	2000	
	Power factor		%	80	
	C.O.P.		W/W	2.50	
	Compressor locked rotor amperes			21.5	
Features	Controls / Temperature control			Microprocessor / I.C. thermostat	
	Control unit			Wireless remote control unit	
	Timer			ON/OFF 24 hours & Daily program, 1-hour OFF	
	Fan speeds		Indoor / Outdoor	3 and Auto / Auto (Hi, Lo)	
	Airflow direction (Indoor)		Horizontal	Manual	
			Vertical	Auto	
	Air filter			Washable, Anti-Mold	
	Compressor			Rotary (Hermetic)	
	Refrigerant / Amount charged at shipment		g	R407c / 1710	
	Refrigerant control			Capillary tube	
	Noise Power Level	Indoor – Hi / Me / Lo	dB-A	48 / 44 / 49	
		Outdoor – Hi	dB-A	51	
	Refrigerant tubing connections			Flare type	
	Max. allowable tubing length at shipment		m	10	
	Refrigerant tube diameter	Narrow tube	mm (in.)	6.35 (1/4)	
		Wide tube	mm (in.)	12.7 (1/2)	
	Refrigerant tube kit			Optional	
Dimensions & Weight				Indoor Unit	Outdoor Unit
	Unit dimensions	Height	mm	680	630
		Width	mm	900	830
		Depth	mm	190	305
	Package dimensions	Height	mm	813	713
		Width	mm	1011	994
		Depth	mm	296	413
	Weight	Net	kg	23.5	52.0
		Shipping	kg	30.0	57.0
	Shipping volume		m^3	0.24	0.29

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Remarks: Rating conditions are:
Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.
Outdoor air temperature 35°C D.B. / 24°C W.B.

Indoor Unit **FCR522CL**
Outdoor Unit **AER522SCL3**

Power Source.....Voltage Rating				400V - 3N - 50Hz .. ....400 V	
Control Circuit			V	230 50Hz	
Performance				Cooling	
	Capacity		kW	6.15	
			BTU/h	21000	
	Air circulation (High)		m^3/h	900	
	Moisture removal (High)		Liters/h	3.3	
Electrical Rating	Available voltage range		V	342 to 418	
	Running amperes		A	4.8	
	Power input		W	2800	
	Power factor		%	84	
	C.O.P.		W/W	2.20	
	Compressor locked rotor amperes		A	28	
Features	Controls / Temperature control			Microprocessor / I.C. thermostat	
	Control unit			Wireless remote control unit	
	Timer			ON/OFF 24 hours & Daily program, 1-hour OFF	
	Fan speeds		Indoor / Outdoor	3 and Auto / Auto (Hi, Lo)	
	Airflow direction (Indoor)		Horizontal	Manual	
			Vertical	Auto	
	Air filter			Washable,Anti - mold	
	Compressor			Rotary (Hermetic)	
	Refrigerant / Amount charged at shipment		g	R407c / 2,410	
	Refrigerant control			Capillary tube	
	Noise Power Level	Indoor – Hi / Me / Lo	dB-A	50 / 47 / 44	
		Outdoor – Hi	dB-A	55	
	Refrigerant tubing connections			Flare type	
	Max. allowable tubing length at shipment		m	10	
	Refrigerant tube diameter	Narrow tube	mm (in.)	6.35 (1/4)	
		Wide tube	mm (in.)	15.88 (5/8)	
	Refrigerant tube kit / Accessories			Optional / Hanging wall bracket	
Dimensions & Weight				Indoor Unit	Outdoor Unit
	Unit dimensions	Height	mm	680	835
		Width	mm	900	850
		Depth	mm	190	305
	Package dimensions	Height	mm	813	913
		Width	mm	1011	1000
		Depth	mm	296	400
	Weight	Net	kg	23.5	67.0
		Shipping	kg	30.0	76.0
	Shipping volume		m^3	0.24	0.37

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Remarks: Rating conditions are:
Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.
Outdoor air temperature 35°C D.B. / 24°C W.B.

2-2. Major Component Specifications

2-2-1. Indoor Unit

Indoor Unit **AWR518CL**

Controller PCB	Part No.				POW–K188E
	Controls				Microprocessor
	Control circuit fuse				250 V – 3.15 A
Remote Control Unit					RCS–8PS3E
Fan & Fan Motor	Type				Cross-flow
	Q´ty ... Dia. and length			mm	1 ... ø88 / L746
	Fan motor model ... Q´ty				UF2– 31A5PA–S ... 1
	No. of poles ... rpm (High)				2 ... 1,305
	Nominal output			W	30
	Coil resistance (Ambient temp. 20°C)			Ω	WHT – BRN : 130.4 WHT – PNK : 169.8 – : – – : – – : –
	Safety devices	Type			Thermal protector
		Operating temp.	Open	°C	130 ± 8
			Close		Automatic reclosing
	Run capacitor			μF	2.0
				VAC	440
Flap Motor	Type				Stepping motor
	Model				MP24GA2
	Rating				DC 12 V
	Coil resistance (Ambient temp. 20°C)			Ω	Each terminals (1–2, 1–3, 1–4, 1–5) 400 : ± 7%
Heat Exch. Coil	Coil				Aluminum plate fin / Copper tube
	Rows				2
	Fin pitch			mm	1.3
	Face area			m2	0.250

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Indoor Unit **AWR522CL**

Circuit Board Ass'y	Part No.				POW–K228E
	Controls				Microprocessor
	Control circuit fuse				250 V – 3.15 A
Remote Control Unit					RCS–8PS3E
Fan & Fan Motor	Type				Cross-flow
	Q´ty ... Dia. and length			mm	1 ... ø88 / L746
	Fan motor model ... Q´ty				UF2– 31A5PA–S ... 1
	No. of poles ... rpm (High)				2 ... 1,380
	Nominal output			W	30
	Coil resistance (Ambient temp. 20°C)			Ω	WHT – BRN : 130.4 WHT – PNK : 169.8 – : – – : – – : –
	Safety devices	Type			Thermal protector
		Operating temp.	Open	°C	130 ± 8
			Close		Automatic reclosing
	Run capacitor			μF	2.0
				VAC	440
Flap Motor	Type				Stepping motor
	Model				MP24GA2
	Rating				DC 12 V
	Coil resistance (Ambient temp. 20°C)			Ω	Each terminals (1–2, 1–3, 1–4, 1–5) 400 : ± 7%
Heat Exch. Coil	Coil				Aluminum plate fin / Copper tube
	Rows				2
	Fin pitch			mm	1.3
	Face area			m2	0.250

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Indoor Unit **FCR518CL**

Controller PCB	Part No.				POW–K185GS–N
	Controls				Microprocessor
	Control circuit fuse				250 V – 3 A
Remote Control Unit					RCS – 5PN3E
Fan & Fan Motor	Type				Centrifugal
	Number ... Dia. and length			mm	2 ... ø 130 / L 180
	Fan motor model ... Number				K48410–M01417 ... 1
	No. of poles ... rpm (230 V, High)				4 ... 1,140
	Nominal output			W	27
	Coil resistance (Ambient temp. 20°C)			Ω	GRY – WHT : 215 ± 7% WHT – VLT : 87 ± 7% VLT – YEL : 87 ± 7% WHT – PNK : 273 ± 7%
	Safety devices	Type			Internal thermal fuse
		Operating temp.	Open	°C	145 ± 5
			Close		Automatic reclosing
	Run capacitor			μF	2.0
				VAC	440
Flap Motor	Model				M2LJ24ZE31
	Rating				AC 208 / 230 V, 50 / 60 Hz
	No. of poles ... rpm				8 ... 2.5 / 3.0
	Nominal output			W	3 / 2.5
	Coil resistance (Ambient temp. 20°C)			kΩ	16.45 ± 15%
Heat Exch. Coil	Coil				Aluminum plate fin / Copper tube
	Rows				2
	Fin pitch			mm	1.8
	Face area			m^2	0.192

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Indoor Unit **FCR522CL**

Controller PCB	Part No.				POW–K185GS–N
	Controls				Microprocessor
	Control circuit fuse				250 V – 3 A
Remote Control Unit					RCS – 5PN3E
Fan & Fan Motor	Type				Centrifugal
	Number ... Dia. and length			mm	2 ... ø 130 / L 180
	Fan motor model ... Number				K48410–M01418 ... 1
	No. of poles ... rpm (230 V, High)				4 ... 1,280
	Nominal output			W	41
	Coil resistance (Ambient temp. 20°C)			Ω	GRY – WHT : 95 ±7% WHT – VLT : 73 ± 7% VLT – YEL : 73 ± 7% WHT – PNK : 207 ± 7%
	Safety devices	Type			Internal thermal fuse
		Operating temp.	Open	°C	145 ± 5
			Close		Automatic reclosing
	Run capacitor			μF	2.0
				VAC	440
Flap Motor	Model				M2LJ24ZE31
	Rating				AC 208 / 230 V, 50 / 60 Hz
	No. of poles ... rpm				8 ... 2.5 / 3.0
	Nominal output			W	3 / 2.5
	Coil resistance (Ambient temp. 20°C)			kΩ	16.45 ± 15%
Heat Exch. Coil	Coil				Aluminum plate fin / Copper tube
	Rows				2
	Fin pitch			mm	1.8
	Face area			m^2	0.192

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

2-2-2. Outdoor Unit

Outdoor Unit **AER518SC3 / AER518SCL3**

Controller PCB	Part No.				POW-C181BL (Only CLR model)	
	Control circuit fuse				250V – 5A (Only CLR model)	
Compressor	Type				Rotary (Hermetic)	
	Compressor model				C-2RN173H8W 80807088	
	Source				380 – 400 V – 3N ~ 50 Hz	
	Nominal output			W	1,700	
	Compressor oil ... Amount			cc	FV68S ... 800	
	Coil resistance (Ambient temp. 25°C)			Ω	C – R : 6.369 C – S : 6.073 R – S : 6.217	
	Safety devices	Type			Internal protector	External protector
		Overload relay			—	HE-10TB TH-5A
		Operating temp.	Open	°C	Automatic opening	—
			Close	°C	Automatic reclosing	—
		Operating amp.(Ambient temp. 25°C)			—	5A
	Run capacitor			μF	—	
				VAC	—	
	Crank case heater				240V 30W	
Fan & Fan Motor	Type				Propeller	
	Q´ty ... Dia.			mm	1 ... ø400	
	Fan motor reference model ... Q'ty				SMEN 19 TFB6047 ... 1	
	Source				220 – 230 V ~ 50 Hz	
	No. of poles ... rpm (220 V, High)				6 ... 910	
	Nominal output			W	43	
	Coil resistance (Ambient temp. 20°C)			Ω	WHT – BRN : 83.4 WHT – PNK : 218.7	
	Safety devices	Type			Internal type	
		Operating temp.	Open	°C	130 ± 5	
			Close		Automatic reclosing	
	Run capacitor			μF	2.0	
				VAC	440	
Heat Exch. Coil	Coil				Aluminum plate fin / Copper tube	
	Rows				2	
	Fin pitch			mm	1.8	
	Face area			m^2	0.508	
External Finish					Acrylic baked-on enamel finish	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Outdoor Unit **AER522SC / AER522SCL3**

Controller PCB	Part No.				Johnson Control (Only CLR model)	
Compressor	Type				Rotary (Hermetic)	
	Compressor model				C-RN223H8A 80244088B	
	Source				380 – 400 V – 3N ~ 50 Hz	
	Nominal output			W	2200	
	Compressor oil ... Amount			cc	FV68S ... 1350	
	Coil resistance (Ambient temp. 25°C)			Ω	C – R : 4.97 C – S : 4.64 R – S : 4.88	
	Safety devices	Type			Internal protector	External protector
		Overload relay			HE-10TB TH-7A	—
		Operating temp.	Open	°C	Automatic opening	—
			Close	°C	Automatic reclosing	—
		Operating amp.(Ambient temp. 25°C)			7A	—
	Run capacitor			μF	—	
				VAC	—	
	Crank case heater				240V 30W	
Fan & Fan Motor	Type				Propeller	
	Q´ty ... Dia.			mm	1 ... ø460	
	Fan motor reference model ... Q´ty				SMEN 1STFB6064 ... 1	
	Source				220 – 230 V ~ 50 Hz	
	No. of poles ... rpm (220 V, High)				6 ... 840	
	Nominal output			W	50	
	Coil resistance (Ambient temp. 20°C)			Ω	WHT – BRN : 99.5 / WHT - YEL : 252 WHT – PNK : 63.2	
	Safety devices	Type			Internal type	
		Operating temp.	Open	°C	130 ± 5	
			Close		Automatic reclosing	
	Run capacitor			μF	5.0	
				VAC	440	
Heat Exch. Coil	Coil				Aluminum plate fin / Copper tube	
	Rows				2	
	Fin pitch			mm	2.0	
	Face area			m^2	0.610	
External Finish					Acrylic baked-on enamel finish	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

2-3. Other Component Specifications

Indoor Unit **AWR518CL**
AWR522CL

Transformer (TR)		**ATR-J105**
Rating	Primary	AC 230V, 50/60Hz
	Secondary	19V, 0.526A
	Capacity	10VA
Coil resistance	Ω (at 21°C)	Primary (WHT – WHT): 205 ± 10%
		Secondary (BRN – BRN): 2.0 ± 10%
Thermal cut-off temp.		150°C

Thermistor (Coil sensor)		**DTN-TKS131B**
Resistance	kΩ	0°C 15.0 ± 2%

Thermistor (Room sensor)		**DTN-TKS142B**
Resistance	kΩ	25°C 5.0 ± 3%

Indoor Unit **FCR518CL**
FCR522CL

Thermistor (Room sensor TH2)		**KTEC-35-S6**			
Resistance	kΩ	10°C	10.0 ± 4%	30°C	4.0 ± 4%
		15°C	7.9 ± 4%	35°C	3.3 ± 4%
		20°C	6.3 ± 4%	40°C	2.7 ± 4%
		25°C	5.0 ± 4%	50°C	1.8 ± 4%

Thermistor (Coil sensor TH1)		**PBC-41E-S14**			
Resistance	kΩ	–20°C	40.1 ± 5%	20°C	6.5 ± 5%
		–10°C	24.4 ± 5%	30°C	4.4 ± 5%
		0°C	15.3 ± 5%	40°C	3.0 ± 5%
		10°C	9.9 ± 5%	50°C	2.1 ± 5%

Transformer (TR)		**ATR-H85**	
Rating	Primary	AC 230V, 50/60Hz	
	Secondary	11V, 0.727A	
	Capacity	8VA	
Coil resistance	Ω (at 21°C)	Primary (WHT – WHT):	214 ± 10%
		Secondary (BRN – BRN):	1.58 ± 10%
Thermal cut-off temp.		145°C, 2A, 250V	

Outdoor Unit **AER518SC3**

Thermostat (Fann speed Control 23S)	**MQT5S-27YZJ**
Switching temp. °C	high → LOW 23.5°C + 0 / - 2.5 low → HIGH 27 °C + 0 / - 3
Contact rating	AC 220V,3A

Negative Phase Relay (47C)	**RDR-S400**
Rating	AC 415V, 3-phase 50Hz
Contact rating	AC 400V, 1A
Operation	Positive phase: ON Negative phase: OFF

Electro Magnetic Contactor (MG)	**HE-10TB TH-5A**
Magnetic contactor	
Coil rating	AC 220–240V, 50Hz / AC 240–260V, 60Hz
Coil resistance Ω (at 25°C)	1,260 ± 10%
Contact rating (Main)	AC 440V, 8A
Thermal relay (Overcurrent relay)	**TH-5A**
Operating amperes	5A

Outdoor Unit **AER518SCL3**

Thermistor (Coil sensor TH3 / Air sensor TH4)		**PBC-41E-S4 / PBC-41E-S8**	
Resistance	kΩ	–20°C 40.1 ± 5%	20°C 6.5 ± 5%
		–10°C 24.4 ± 5%	30°C 4.4 ± 5%
		0°C 15.3 ± 5%	40°C 3.0 ± 5%
		10°C 9.9 ± 5%	50°C 2.1 ± 5%

Solid State Relay (SSR)		**G3L-205TL-TS1**
Input		
	Rated voltage	DC 12V
	Control voltage range	DC 0V to 6.4V
Load voltage range		AC 75V to 264V, 50Hz

Negative Phase Relay (47C)	**RDR-S400**
Rating	AC 415V, 3-phase 50Hz
Contact rating	AC 400V, 1A
Operation	Positive phase: ON
	Negative phase: OFF

Electro Magnetic Contactor (MG)		**HE-10TB TH-5A**
Magnetic contactor		
Coil rating		AC 220–240V, 50Hz / AC 240–260V, 60Hz
Coil resistance	Ω (at 25°C)	1,260 ± 10%
Contact rating (Main)		AC 440V, 8A
Thermal relay (Overcurrent relay)		**TH-5A**
Operating amperes		5A

Transformer (TR2)		**ATR-J105-I**	
Rating	Primary	AC 230V, 50Hz	
	Secondary	19V, 0.526A	
	Capacity	10VA	
Coil resistance	Ω (at 22°C)	Primary (WHT – WHT):	205 ± 10%
		Secondary (BRN – BRN):	2.0 ± 10%
Thermal cut-off temp.		150°C	

Power Relay		**HH62S DC24V**
Coil rating		DC 24V
Coil resistance	kΩ (at 23°C)	650 ± 10%
Contact rating		AC 250V, 10A

Outdoor Unit **AER522SC3**

Electro Magnetic Contactor (MG)	**HE-10TB TH-7A**
Coil rating	AC 220–240V, 50Hz / AC 240–260V, 60Hz
Coil resistance Ω (at 25°C)	1,260 ± 10%
Contact rating (Main)	AC 440V, 8A
Thermal relay (Overcurrent relay)	TH-7A
Operating amperes	7A

Negative Phase Relay (47C)	**RDR-S400**
Rating	AC 415V, 3-phase 50Hz
Contact rating	AC 400V, 1A
Operation	Positive phase: ON
	Negative phase: OFF

Thermostat (Fan Speed Control 23S)	**YTB-S383**
Switching temp. °C	high → LOW 28.5°C ± 1
	low → HIGH 31°C ± 1

Electro Magnetic Contactor (MG)	**HE-10TB TH-7A**
Coil rating	AC 220–240V, 50Hz / AC 240–260V, 60Hz
Coil resistance Ω (at 25°C)	1,260 ± 10%
Contact rating (Main)	AC 440V, 8A
Thermal relay (Overcurrent relay)	
Operating amperes	7A

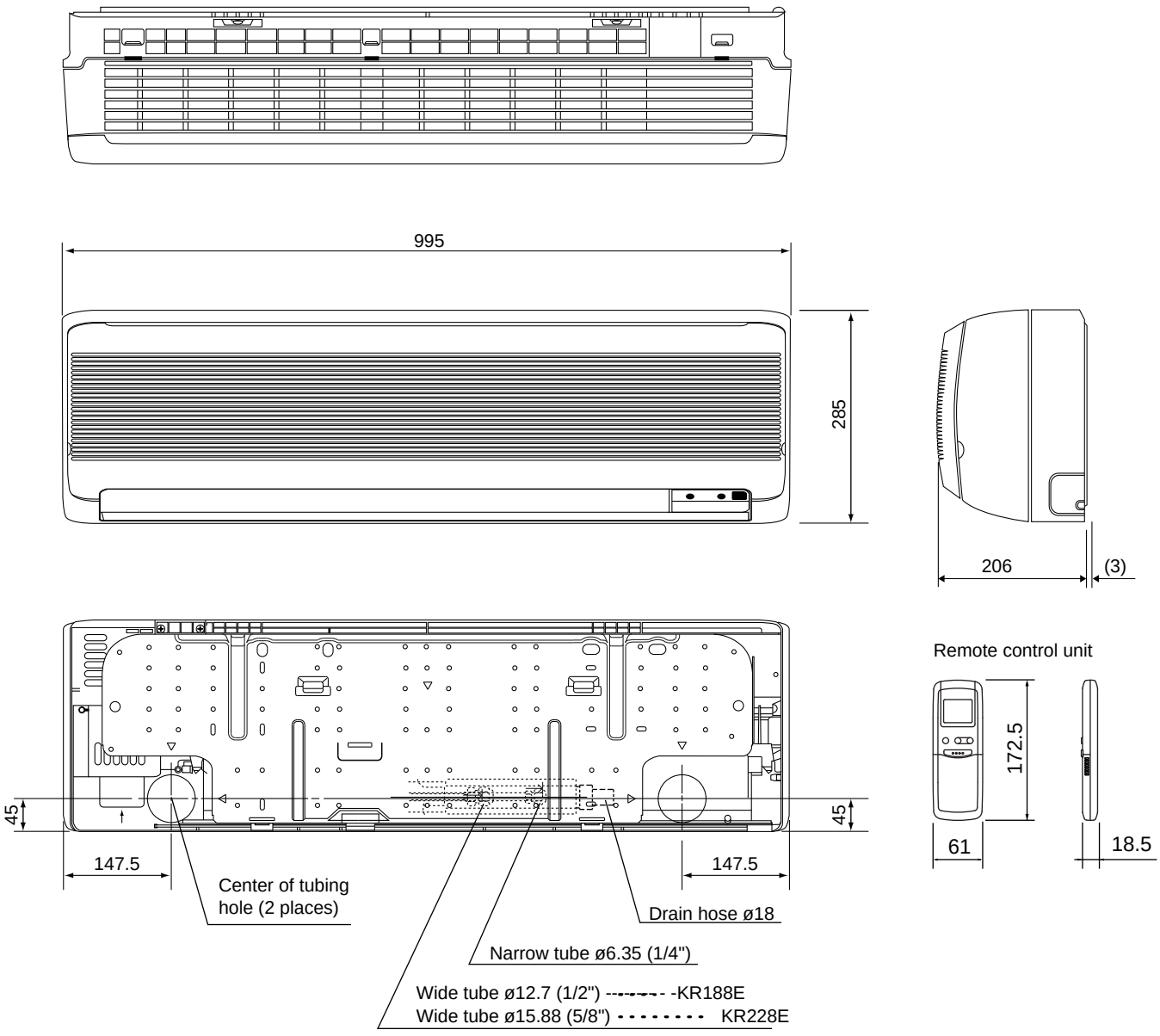
Negative Phase Relay (47C)	**RDR-S400**
Rating	AC 415V, 3-phase 50Hz
Contact rating	AC 400V, 1A
Operation	Positive phase: ON
	Negative phase: OFF

Thermostat (Fan Speed Control 23S)	**YTB-S383**
Switching temp. °C	high → LOW 28.5°C ± 1
	low → HIGH 31°C ± 1

Pressure Trasducer (Johnson C.)	**P35 AC**
Range Bar	14 to 24
Factory Setting Bar	16 ± 0.5

3. DIMENSIONAL DATA

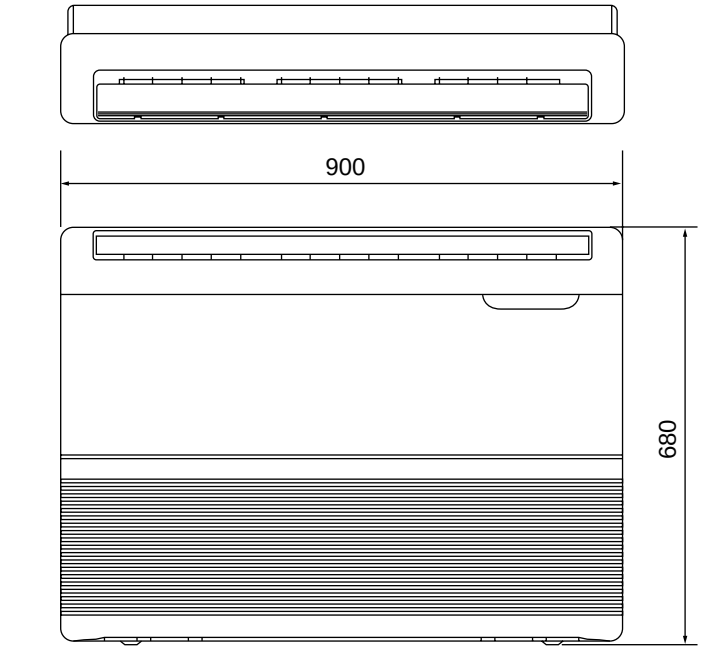
Indoor Unit **AWR518CL**
AWR522CL

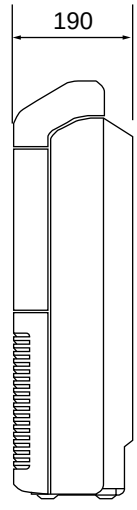


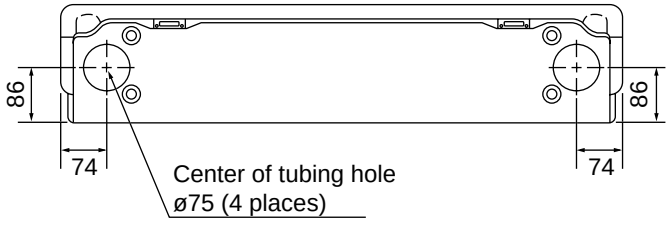
Unit : mm

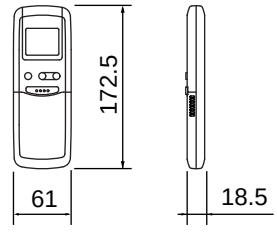
Indoor Unit **FCR518CL**

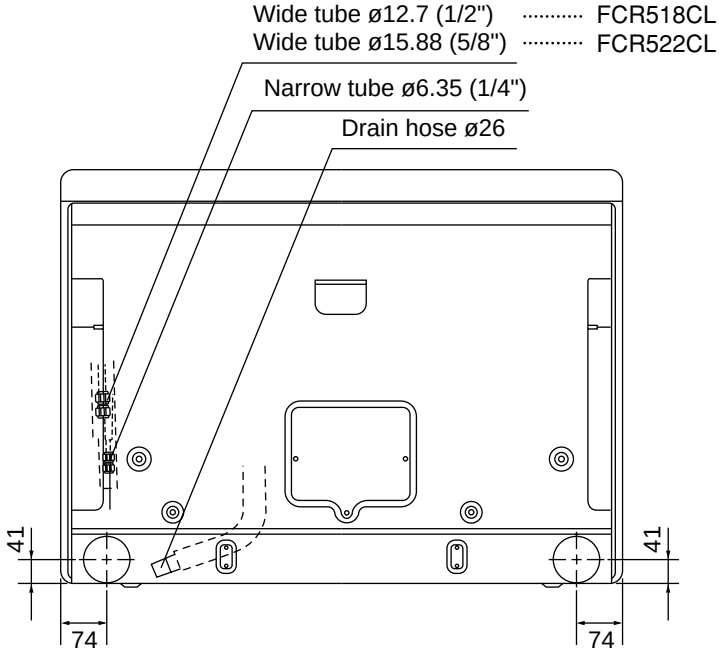
FCR522CL





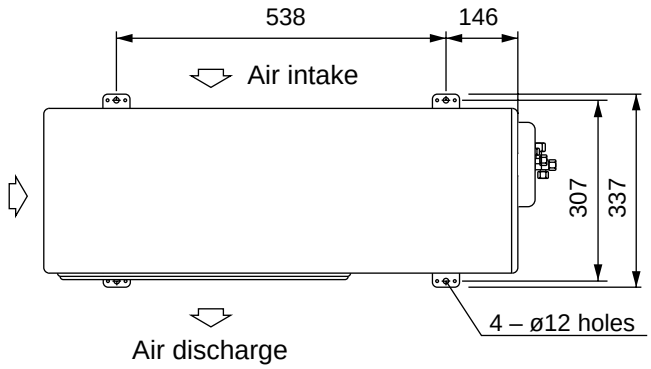


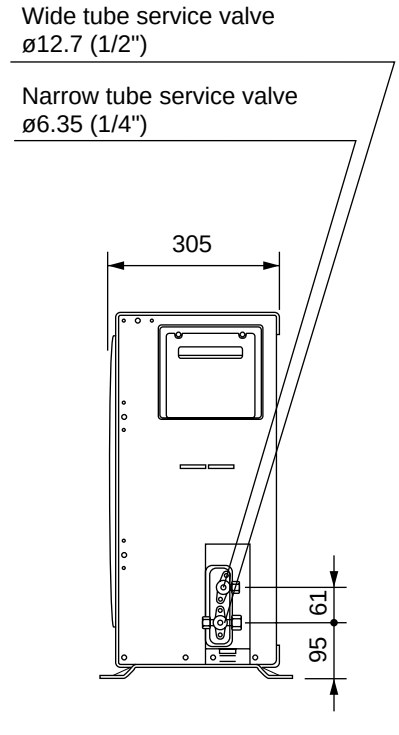


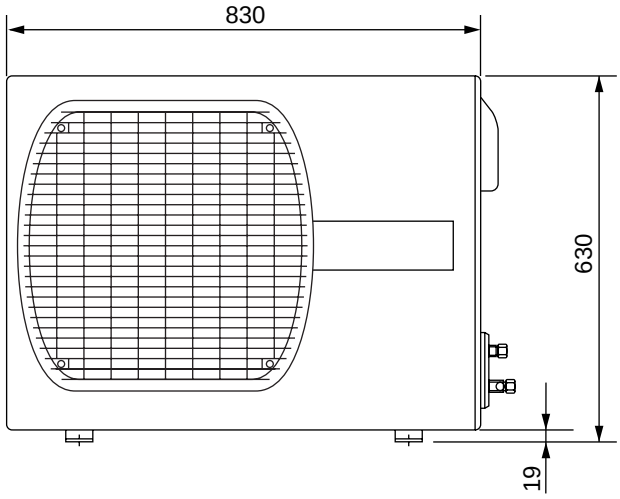


Dimensions : mm

Outdoor Unit **AER518SC3**
AER518SCL3

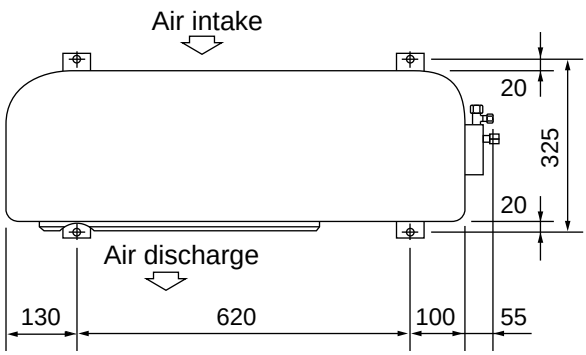


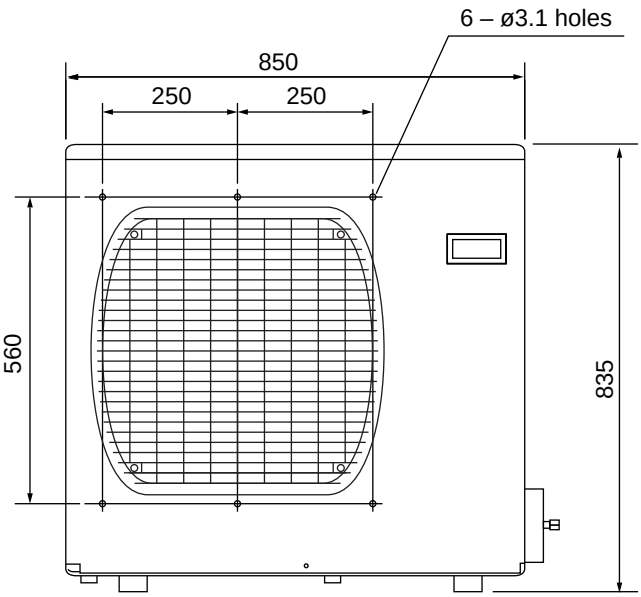


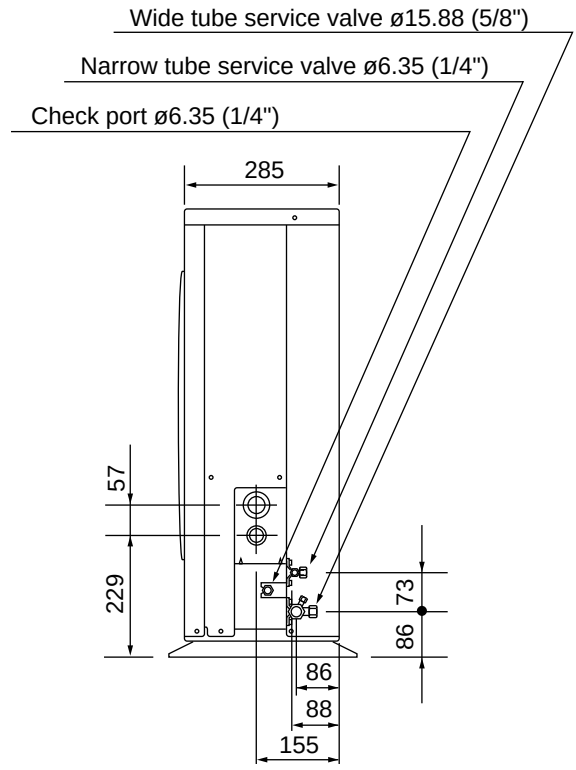


Unit : mm

Outdoor Unit **AER522SC3**
AER522SCL3



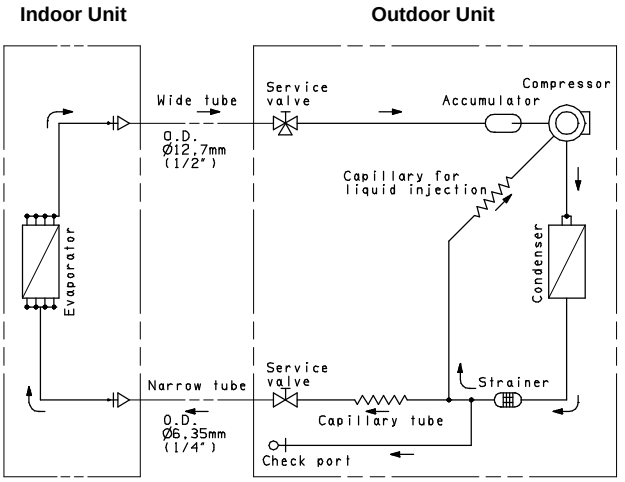




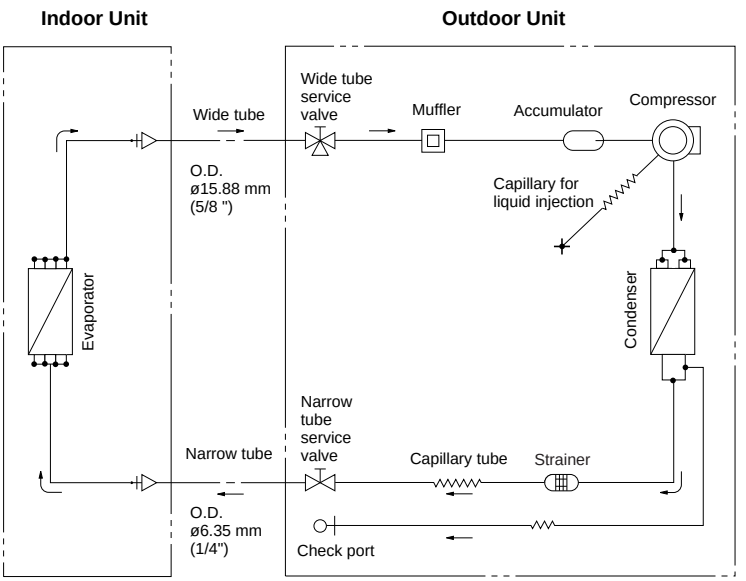
Unit : mm

4. REFRIGERANT FLOW DIAGRAM

Indoor Unit **AWR518CL** **FCR518CL** Outdoor Unit **AER518SC3**



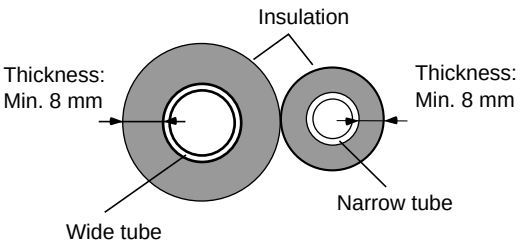
Indoor Unit **AWR522CL** **FCR522CL** Outdoor Unit **AER522SC3**



Insulation of Refrigerant Tubing

IMPORTANT

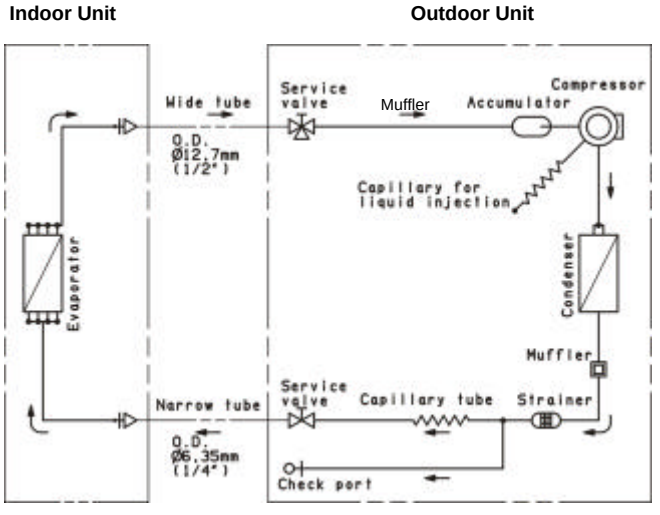
Because capillary tubing is used in the outdoor unit, both the wide and narrow tubes of this air conditioner become cold. To prevent heat loss and wet floors due to dripping of condensation, **both tubes must be well insulated** with a proper insulation material. The thickness of the insulation should be a min. 8 mm.



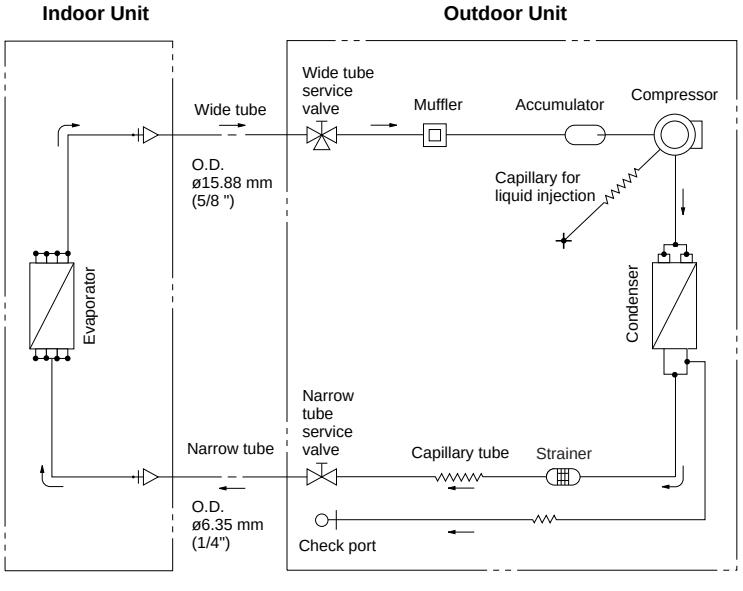
CAUTION

After a tube has been insulated, never try to bend it into a narrow curve because it can cause the tube to break or crack.

Indoor Unit **AWR518CL** Outdoor Unit **AER518SCL3**
FCR518CL



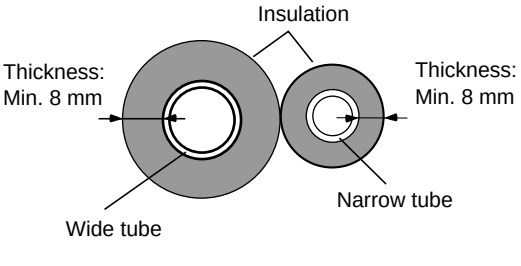
Indoor Unit **AWR522CL** Outdoor Unit **AER522SCL3**
FCR522CL



Insulation of Refrigerant Tubing

IMPORTANT

Because capillary tubing is used in the outdoor unit, both the wide and narrow tubes of this air conditioner become cold. To prevent heat loss and wet floors due to dripping of condensation, **both tubes must be well insulated** with a proper insulation material. The thickness of the insulation should be a min. 8 mm.



CAUTION

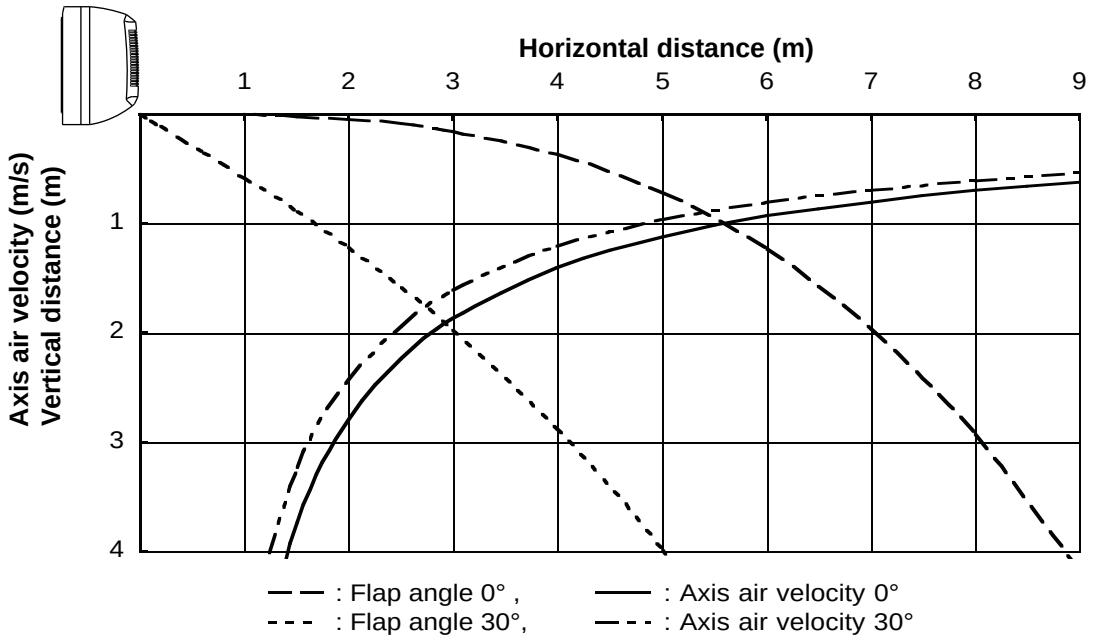
After a tube has been insulated, never try to bend it into a narrow curve because it can cause the tube to break or crack.

5. PERFORMANCE DATA

5-1. Air Throw Distance Chart

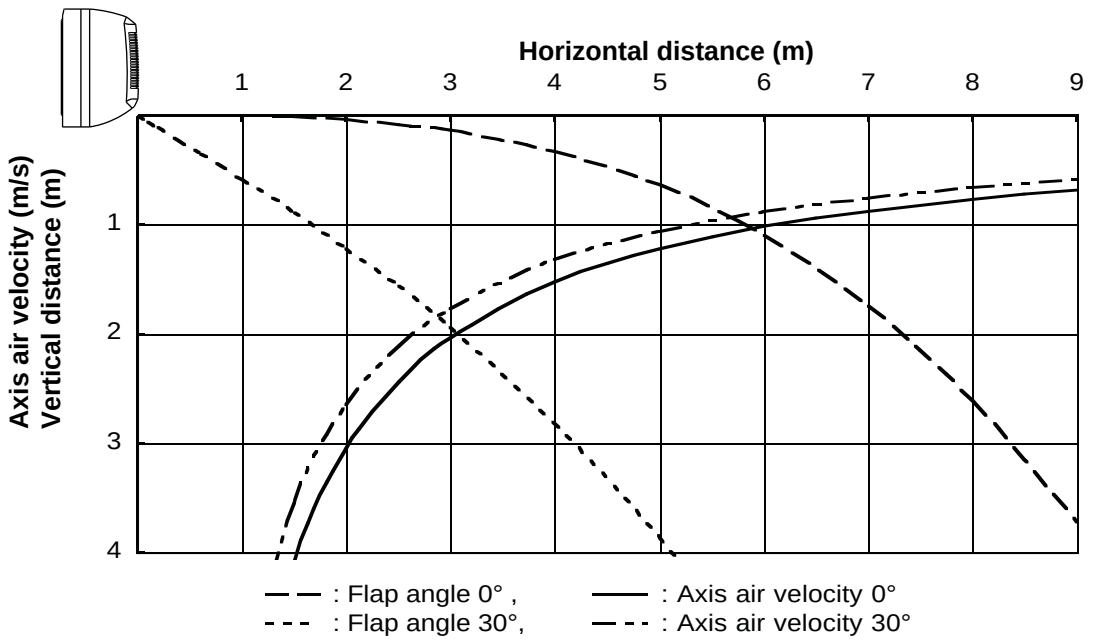
Indoor Unit **AWR518CL**

Room air temp. : 27°C
Fan speed : High



Indoor Unit **AWR522CL**

Room air temp. : 27°C
Fan speed : High

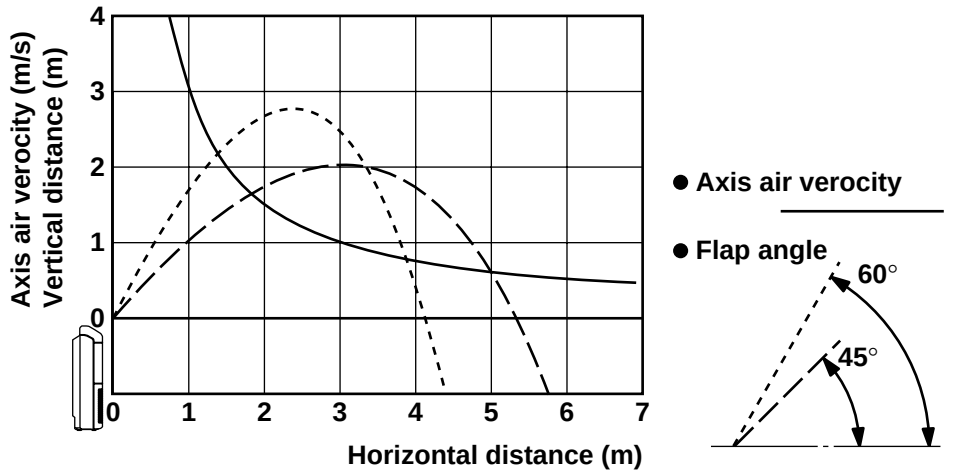


AIR FLOW CHART

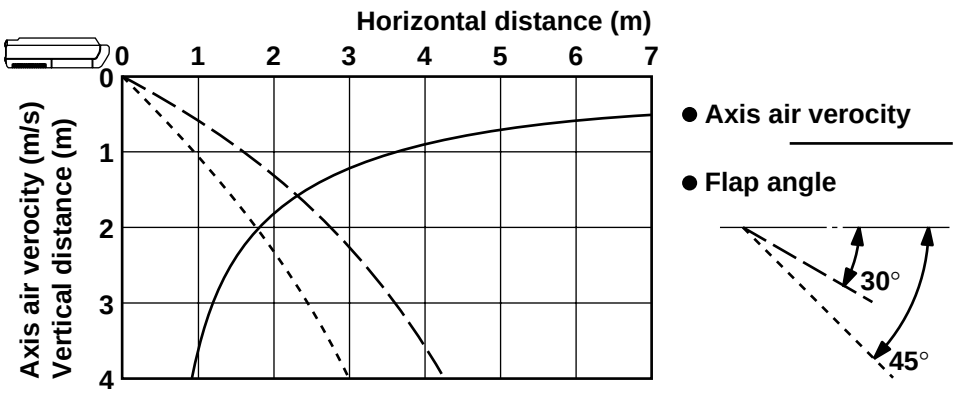
Indoor Unit **FCR518CL**

Room air temp. : 27°C
Fan speed : High

■ Floor mounted



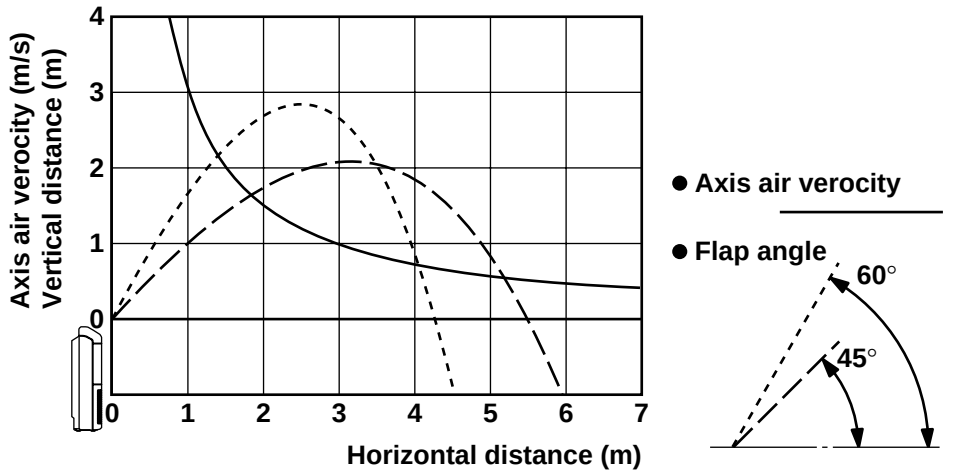
■ Ceiling mounted



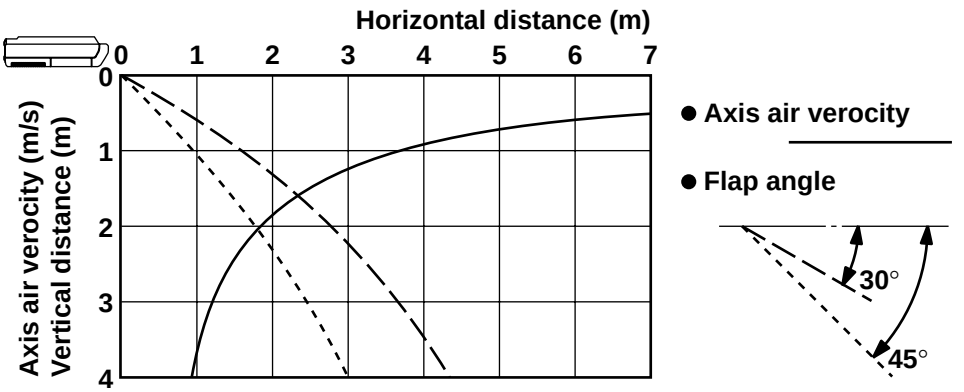
Indoor Unit **FCR522CL**

Room air temp. : 27°C
Fan speed : High

■ Floor mounted



■ Ceiling mounted



5-2. Coolling capacity

INDOOR UNIT: **AWR518CL**
OUTDOOR UNIT: **AER518SC3**

400V 50 Hz

RATING CAPACITY		5 kW					
AIR FLOW RATE		760 m³/h					
EVAPORATOR		CONDENSER					
ENT.TEMP. °C		OUTDOOR AMBIENT TEMP. °C					
W.B.	D.B.		25	30	35	40	43
15		TC	4,83	4,69	4,47	4,19	3,87
		CM	1,73	1,84	1,98	2,18	2,37
	21	SHC	3,31	3,25	3,14	3,00	2,85
	23	SHC	3,76	3,68	3,57	3,44	3,28
	25	SHC	4,19	4,10	3,99	3,86	3,70
	27	SHC	4,63	4,53	4,42	4,19	3,87
	29	SHC	4,83	4,69	4,47	4,19	3,87
	31	SHC	4,83	4,69	4,47	4,19	3,87
17		TC	5,23	5,03	4,79	4,50	4,15
		CM	1,77	1,90	2,04	2,24	2,43
	21	SHC	2,90	2,82	2,71	2,57	2,41
	23	SHC	3,33	3,24	3,13	2,99	2,84
	25	SHC	3,78	3,67	3,56	3,43	3,26
	27	SHC	4,21	4,09	3,98	3,85	3,69
	29	SHC	4,66	4,52	4,41	4,28	4,11
	31	SHC	5,09	4,94	4,79	4,50	4,15
19		TC	5,54	5,36	5,10	4,79	4,41
		CM	1,86	1,96	2,10	2,30	2,50
	21	SHC	2,43	2,35	2,24	2,11	1,95
	23	SHC	2,85	2,78	2,67	2,54	2,38
	25	SHC	3,27	3,20	3,09	2,97	2,81
	27	SHC	3,69	3,64	3,53	3,39	3,24
	29	SHC	4,10	4,06	3,95	3,83	3,66
	31	SHC	4,53	4,49	4,38	4,25	4,09
21		TC	5,88	5,68	5,41	5,08	4,68
		CM	1,90	2,01	2,16	2,37	2,57
	23	SHC	2,40	2,32	2,21	2,07	1,92
	25	SHC	2,81	2,74	2,64	2,51	2,35
	27	SHC	3,23	3,17	3,06	2,94	2,77
	29	SHC	3,64	3,59	3,49	3,36	3,20
	31	SHC	4,07	4,02	3,91	3,79	3,64
23		TC	6,28	6,01	5,68	5,31	4,94
		CM	1,93	2,06	2,22	2,42	2,64
	25	SHC	2,35	2,25	2,13	2,00	1,86
	27	SHC	2,75	2,67	2,55	2,42	2,28
	29	SHC	3,17	3,10	2,98	2,85	2,72
	31	SHC	3,62	3,54	3,40	3,27	3,15

TC: TOTAL COOLING CAPACITY kW
SHC: SENSIBLE HEAT CAPACITY kW
CM: COMPRESSOR INPUT kW

RATING CONDITIONS

OUTDOOR AMBIENT TEMPERATURE 35°C D.B.
INDOOR UNIT ENTERING AIR TEMP. 27°C D.B./19°C W.B.

Indoor Unit **AWR518CL**
Outdoor Unit **AER518SCL3**

400V 50 Hz

RATING CAPACITY		5 kW					
AIR FLOW RATE		760 m³/h					
EVAPORATOR		CONDENSER					
ENT.TEMP. °C		OUTDOOR AMBIENT TEMP. °C					
W.B.	D.B.		25	30	35	40	43
15		TC	4.74	4.60	4.38	4.11	3.79
		CM	1.65	1.76	1.89	2.07	2.26
	21	SHC	3.25	3.18	3.08	2.95	2.79
	23	SHC	3.68	3.61	3.50	3.37	3.22
	25	SHC	4.10	4.02	3.91	3.78	3.63
	27	SHC	4.54	4.45	4.34	4.11	3.79
	29	SHC	4.74	4.60	4.38	4.11	3.79
	31	SHC	4.74	4.60	4.38	4.11	3.79
17		TC	5.13	4.93	4.70	4.41	4.07
		CM	1.68	1.80	1.94	2.13	2.32
	21	SHC	2.84	2.76	2.65	2.52	2.36
	23	SHC	3.27	3.17	3.07	2.93	2.78
	25	SHC	3.70	3.60	3.49	3.36	3.20
	27	SHC	4.13	4.01	3.90	3.77	3.62
	29	SHC	4.56	4.43	4.33	4.20	4.03
	31	SHC	4.99	4.85	4.70	4.41	4.07
19		TC	5.43	5.25	5.00	4.70	4.33
		CM	1.77	1.87	2.00	2.20	2.38
	21	SHC	2.38	2.30	2.20	2.07	1.91
	23	SHC	2.80	2.73	2.62	2.49	2.34
	25	SHC	3.21	3.14	3.03	2.91	2.75
	27	SHC	3.62	3.57	3.46	3.33	3.17
	29	SHC	4.02	3.98	3.87	3.75	3.59
	31	SHC	4.45	4.40	4.29	4.16	4.01
21		TC	5.76	5.57	5.30	4.98	4.59
		CM	1.80	1.91	2.06	2.26	2.45
	23	SHC	2.35	2.27	2.16	2.03	1.88
	25	SHC	2.75	2.68	2.59	2.46	2.30
	27	SHC	3.17	3.11	3.00	2.88	2.72
	29	SHC	3.57	3.52	3.42	3.29	3.14
	31	SHC	3.99	3.95	3.84	3.72	3.57
23		TC	6.15	5.89	5.57	5.21	4.85
		CM	1.84	1.96	2.11	2.30	2.51
	25	SHC	2.31	2.21	2.09	1.96	1.83
	27	SHC	2.70	2.62	2.50	2.37	2.24
	29	SHC	3.11	3.04	2.92	2.79	2.66
	31	SHC	3.55	3.47	3.34	3.21	3.09

TC: TOTAL COOLING CAPACITY kW
SHC: SENSIBLE HEAT CAPACITY kW
CM: COMPRESSOR INPUT kW

RATING CONDITIONS

OUTDOOR AMBIENT TEMPERATURE 35°C D.B.
INDOOR UNIT ENTERING AIR TEMP. 27°C D.B./19°C W.B.

INDOOR UNIT: **AWR522CL**
OUTDOOR UNIT: **AER522SC3 / AER522SCL3**

400V 50 Hz

RATING CAPACITY		6,15 kW					
AIR FLOW RATE		830 m³/h					
EVAPORATOR		CONDENSER					
ENT.TEMP. °C		OUTDOOR AMBIENT TEMP. °C					
W.B.	D.B.		25	30	35	40	43
15		TC	5,83	5,66	5,39	5,05	4,67
		CM	2,30	2,46	2,65	2,90	3,16
	21	SHC	4,00	3,92	3,78	3,62	3,44
	23	SHC	4,53	4,44	4,31	4,14	3,96
	25	SHC	5,05	4,95	4,81	4,65	4,47
	27	SHC	5,58	5,47	5,33	5,05	4,67
	29	SHC	5,83	5,66	5,39	5,05	4,67
	31	SHC	5,83	5,66	5,39	5,05	4,67
17		TC	6,31	6,07	5,78	5,43	5,00
		CM	2,36	2,53	2,71	2,99	3,24
	21	SHC	3,50	3,40	3,26	3,10	2,90
	23	SHC	4,02	3,90	3,77	3,61	3,42
	25	SHC	4,55	4,43	4,29	4,13	3,93
	27	SHC	5,08	4,93	4,80	4,64	4,45
	29	SHC	5,61	5,45	5,32	5,16	4,96
	31	SHC	6,14	5,96	5,78	5,43	5,00
19		TC	6,68	6,46	6,15	5,78	5,32
		CM	2,48	2,61	2,80	3,07	3,33
	21	SHC	2,93	2,83	2,70	2,54	2,35
	23	SHC	3,44	3,36	3,22	3,06	2,87
	25	SHC	3,94	3,86	3,73	3,58	3,38
	27	SHC	4,45	4,39	4,25	4,09	3,90
	29	SHC	4,95	4,89	4,76	4,61	4,41
	31	SHC	5,47	5,41	5,28	5,12	4,93
21		TC	7,09	6,85	6,52	6,12	5,64
		CM	2,53	2,68	2,89	3,16	3,43
	23	SHC	2,89	2,79	2,66	2,50	2,31
	25	SHC	3,39	3,30	3,18	3,02	2,83
	27	SHC	3,90	3,82	3,69	3,54	3,34
	29	SHC	4,39	4,33	4,21	4,05	3,86
	31	SHC	4,91	4,85	4,72	4,57	4,39
23		TC	7,57	7,25	6,85	6,40	5,96
		CM	2,58	2,75	2,95	3,23	3,52
	25	SHC	2,84	2,71	2,57	2,41	2,25
	27	SHC	3,32	3,22	3,08	2,91	2,75
	29	SHC	3,82	3,74	3,60	3,44	3,28
	31	SHC	4,37	4,26	4,10	3,94	3,80

TC: TOTAL COOLING CAPACITY kW
SHC: SENSIBLE HEAT CAPACITY kW
CM: COMPRESSOR INPUT kW

RATING CONDITIONS

OUTDOOR AMBIENT TEMPERATURE 35°C D.B.
INDOOR UNIT ENTERING AIR TEMP. 27°C D.B./19°C W.B.

INDOOR UNIT: **FCR518CL**
OUTDOOR UNIT: **AER518SC3**

400V 50 Hz

RATING CAPACITY		5.1 kW					
AIR FLOW RATE		800 m³/h					
EVAPORATOR		CONDENSER					
ENT.TEMP. °C		OUTDOOR AMBIENT TEMP. °C					
W.B.	D.B.		25	30	35	40	43
15		TC	4,83	4,69	4,47	4,19	3,87
		CM	1,73	1,84	1,98	2,18	2,37
	21	SHC	3,31	3,25	3,14	3,00	2,85
	23	SHC	3,76	3,68	3,57	3,44	3,28
	25	SHC	4,19	4,10	3,99	3,86	3,70
	27	SHC	4,63	4,53	4,42	4,19	3,87
	29	SHC	4,83	4,69	4,47	4,19	3,87
	31	SHC	4,83	4,69	4,47	4,19	3,87
17		TC	5,23	5,03	4,79	4,50	4,15
		CM	1,77	1,90	2,04	2,24	2,43
	21	SHC	2,90	2,82	2,71	2,57	2,41
	23	SHC	3,33	3,24	3,13	2,99	2,84
	25	SHC	3,78	3,67	3,56	3,43	3,26
	27	SHC	4,21	4,09	3,98	3,85	3,69
	29	SHC	4,66	4,52	4,41	4,28	4,11
	31	SHC	5,09	4,94	4,79	4,50	4,15
19		TC	5,54	5,36	5,10	4,79	4,41
		CM	1,86	1,96	2,10	2,30	2,50
	21	SHC	2,43	2,35	2,24	2,11	1,95
	23	SHC	2,85	2,78	2,67	2,54	2,38
	25	SHC	3,27	3,20	3,09	2,97	2,81
	27	SHC	3,69	3,64	3,53	3,39	3,24
	29	SHC	4,10	4,06	3,95	3,83	3,66
	31	SHC	4,53	4,49	4,38	4,25	4,09
21		TC	5,88	5,68	5,41	5,08	4,68
		CM	1,90	2,01	2,16	2,37	2,57
	23	SHC	2,40	2,32	2,21	2,07	1,92
	25	SHC	2,81	2,74	2,64	2,51	2,35
	27	SHC	3,23	3,17	3,06	2,94	2,77
	29	SHC	3,64	3,59	3,49	3,36	3,20
	31	SHC	4,07	4,02	3,91	3,79	3,64
23		TC	6,28	6,01	5,68	5,31	4,94
		CM	1,93	2,06	2,22	2,42	2,64
	25	SHC	2,35	2,25	2,13	2,00	1,86
	27	SHC	2,75	2,67	2,55	2,42	2,28
	29	SHC	3,17	3,10	2,98	2,85	2,72
	31	SHC	3,62	3,54	3,40	3,27	3,15

TC: TOTAL COOLING CAPACITY kW
SHC: SENSIBLE HEAT CAPACITY kW
CM: COMPRESSOR INPUT kW

RATING CONDITIONS

OUTDOOR AMBIENT TEMPERATURE 35°C D.B.
INDOOR UNIT ENTERING AIR TEMP. 27°C D.B./19°C W.B.

INDOOR UNIT: **FCR518CL**
OUTDOOR UNIT: **AER518SCL3**

400V 50 Hz

RATING CAPACITY		5 kW					
AIR FLOW RATE		800 m³/h					
EVAPORATOR		CONDENSER					
ENT.TEMP. °C		OUTDOOR AMBIENT TEMP. °C					
W.B.	D.B.		25	30	35	40	43
		TC	4,74	4,60	4,38	4,11	3,79
		CM	1,65	1,76	1,89	2,07	2,26
	21	SHC	3,25	3,18	3,08	2,95	2,79
	23	SHC	3,68	3,61	3,50	3,37	3,22
15	25	SHC	4,10	4,02	3,91	3,78	3,63
	27	SHC	4,54	4,45	4,34	4,11	3,79
	29	SHC	4,74	4,60	4,38	4,11	3,79
	31	SHC	4,74	4,60	4,38	4,11	3,79
		TC	5,13	4,93	4,70	4,41	4,07
		CM	1,68	1,80	1,94	2,13	2,32
	21	SHC	2,84	2,76	2,65	2,52	2,36
	23	SHC	3,27	3,17	3,07	2,93	2,78
17	25	SHC	3,70	3,60	3,49	3,36	3,20
	27	SHC	4,13	4,01	3,90	3,77	3,62
	29	SHC	4,56	4,43	4,33	4,20	4,03
	31	SHC	4,99	4,85	4,70	4,41	4,07
		TC	5,43	5,25	5,00	4,70	4,33
		CM	1,77	1,87	2,00	2,20	2,38
	21	SHC	2,38	2,30	2,20	2,07	1,91
	23	SHC	2,80	2,73	2,62	2,49	2,34
19	25	SHC	3,21	3,14	3,03	2,91	2,75
	27	SHC	3,62	3,57	3,46	3,33	3,17
	29	SHC	4,02	3,98	3,87	3,75	3,59
	31	SHC	4,45	4,40	4,29	4,16	4,01
		TC	5,76	5,57	5,30	4,98	4,59
		CM	1,80	1,91	2,06	2,26	2,45
	23	SHC	2,35	2,27	2,16	2,03	1,88
21	25	SHC	2,75	2,68	2,59	2,46	2,30
	27	SHC	3,17	3,11	3,00	2,88	2,72
	29	SHC	3,57	3,52	3,42	3,29	3,14
	31	SHC	3,99	3,95	3,84	3,72	3,57
		TC	6,15	5,89	5,57	5,21	4,85
		CM	1,84	1,96	2,11	2,30	2,51
23	25	SHC	2,31	2,21	2,09	1,96	1,83
	27	SHC	2,70	2,62	2,50	2,37	2,24
	29	SHC	3,11	3,04	2,92	2,79	2,66
	31	SHC	3,55	3,47	3,34	3,21	3,09

TC: TOTAL COOLING CAPACITY kW
SHC: SENSIBLE HEAT CAPACITY kW
CM: COMPRESSOR INPUT kW

RATING CONDITIONS

OUTDOOR AMBIENT TEMPERATURE 35°C D.B.
INDOOR UNIT ENTERING AIR TEMP. 27°C D.B./19°C W.B.

INDOOR UNIT: **FCR522CL**
OUTDOOR UNIT: **AER522SC3 / AER522ACL3**

400V 50 Hz

RATING CAPACITY		6,15 kW					
AIR FLOW RATE		900 m³/h					
EVAPORATOR		CONDENSER					
ENT.TEMP. °C		OUTDOOR AMBIENT TEMP. °C					
W.B.	D.B.		25	30	35	40	43
		TC	5,83	5,66	5,39	5,05	4,67
		CM	2,30	2,46	2,65	2,90	3,16
	21	SHC	4,00	3,92	3,78	3,62	3,44
	23	SHC	4,53	4,44	4,31	4,14	3,96
15	25	SHC	5,05	4,95	4,81	4,65	4,47
	27	SHC	5,58	5,47	5,33	5,05	4,67
	29	SHC	5,83	5,66	5,39	5,05	4,67
	31	SHC	5,83	5,66	5,39	5,05	4,67
		TC	6,31	6,07	5,78	5,43	5,00
		CM	2,36	2,53	2,71	2,99	3,24
	21	SHC	3,50	3,40	3,26	3,10	2,90
	23	SHC	4,02	3,90	3,77	3,61	3,42
17	25	SHC	4,55	4,43	4,29	4,13	3,93
	27	SHC	5,08	4,93	4,80	4,64	4,45
	29	SHC	5,61	5,45	5,32	5,16	4,96
	31	SHC	6,14	5,96	5,78	5,43	5,00
		TC	6,68	6,46	6,15	5,78	5,32
		CM	2,48	2,61	2,80	3,07	3,33
	21	SHC	2,93	2,83	2,70	2,54	2,35
	23	SHC	3,44	3,36	3,22	3,06	2,87
19	25	SHC	3,94	3,86	3,73	3,58	3,38
	27	SHC	4,45	4,39	4,25	4,09	3,90
	29	SHC	4,95	4,89	4,76	4,61	4,41
	31	SHC	5,47	5,41	5,28	5,12	4,93
		TC	7,09	6,85	6,52	6,12	5,64
		CM	2,53	2,68	2,89	3,16	3,43
	23	SHC	2,89	2,79	2,66	2,50	2,31
21	25	SHC	3,39	3,30	3,18	3,02	2,83
	27	SHC	3,90	3,82	3,69	3,54	3,34
	29	SHC	4,39	4,33	4,21	4,05	3,86
	31	SHC	4,91	4,85	4,72	4,57	4,39
		TC	7,57	7,25	6,85	6,40	5,96
		CM	2,58	2,75	2,95	3,23	3,52
23	25	SHC	2,84	2,71	2,57	2,41	2,25
	27	SHC	3,32	3,22	3,08	2,91	2,75
	29	SHC	3,82	3,74	3,60	3,44	3,28
	31	SHC	4,37	4,26	4,10	3,94	3,80

TC: TOTAL COOLING CAPACITY kW
SHC: SENSIBLE HEAT CAPACITY kW
CM: COMPRESSOR INPUT kW

RATING CONDITIONS

OUTDOOR AMBIENT TEMPERATURE 35°C D.B.
INDOOR UNIT ENTERING AIR TEMP. 27°C D.B./19°C W.B.

6. ELECTRICAL DATA

6-1. Electrical Characteristics

Indoor Unit **AWR518CL**
Outdoor Unit **AER518SC3**

			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			230 V 50 Hz		400 V - 3N - 50Hz	
Rating Conditions	Running Amps.	A	0.30	0.40	3.17	3.6
	Power Input	kW	0,071	0,086	1,98	2,0
Full Load Conditions	Running Amps.	A	0.37	0.50	3.7	4.1
	Power Input	kW	0,070	0,093	2,30	2,40

Rating Conditions : Indoor Air Temperature 27°C D.B. / 19°C W.B.
Outdoor Air Temperature 35°C D.B.
Full Load Conditions : Indoor Air Temperature 32°C D.B. / 23°C W.B.
Outdoor Air Temperature 43°C D.B.

Indoor Unit **AWR522CL**
Outdoor Unit **AER522SC3**

			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			23O V 50 Hz		400 - 3N - 50Hz	
Rating Conditions	Running Amps.	A	0.28	0.44	4.02	4.8
	Power Input	kW	0,066	0,113	2,57	2,8
Full Load Conditions	Running Amps.	A	0.39	0.55	4.85	5.6
	Power Input	kW	0,075	0,120	3,18	3,40

Rating Conditions : Indoor Air Temperature 27°C D.B. / 19°C W.B.
Outdoor Air Temperature 35°C D.B.
Full Load Conditions : Indoor Air Temperature 32°C D.B. / 23°C W.B.
Outdoor Air Temperature 43°C D.B.

Indoor Unit **AWR518CL**
Outdoor Unit **AER518SCL3**

			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			230 V 50 Hz		400 V - 3N - 50Hz	
Rating Conditions	Running Amps.	A	0.37	0.50	2.97	3.6
	Power Input	kW	0,070	0,093	1,85	2,0
Full Load Conditions	Running Amps.	A	0.37	0.50	3.7	4.1
	Power Input	kW	0,070	0,093	2,30	2,40

Rating Conditions : Indoor Air Temperature 27°C D.B. / 19°C W.B.
Outdoor Air Temperature 35°C D.B.
Full Load Conditions : Indoor Air Temperature 32°C D.B. / 23°C W.B.
Outdoor Air Temperature 43°C D.B.

Indoor Unit **AWR522CL**
Outdoor Unit **AER522SCL3**

			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			23O V 50 Hz		400 - 3N - 50Hz	
Rating Conditions	Running Amps.	A	0.28	0.44	4.02	4.8
	Power Input	kW	0,066	0,113	2,57	2,8
Full Load Conditions	Running Amps.	A	0.39	0.55	4.85	5.6
	Power Input	kW	0,075	0,120	3,18	3,40

Rating Conditions : Indoor Air Temperature 27°C D.B. / 19°C W.B.
Outdoor Air Temperature 35°C D.B.
Full Load Conditions : Indoor Air Temperature 32°C D.B. / 23°C W.B.
Outdoor Air Temperature 43°C D.B.

Indoor Unit **FCR518CL**
Outdoor Unit **AER518SC3**

			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			230 V ~ 50Hz		400 V – 3N ~ 50Hz	
Rating Conditions	Running Amps.	A	0.28	0.40	3.15	3.6
	Power Input	kW	0.072	0.086	1.98	**2.0**
Full Load Conditions	Running Amps.	A	0.33	0.40	3.37	4.1
	Power Input	kW	0.071	0.082	2.247	2.4

Rating Conditions: Indoor Air Temperature 27°C DB / 19°C WB
Outdoor Air Temperature 35°C DB
Full Load Conditions: Indoor Air Temperature 32°C DB / 23°C WB
Outdoor Air Temperature 43°C DB

Indoor Unit **FCR522CL**
Outdoor Unit **AER522SC3**

			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			230 V ~ 50Hz		400 V – 3N ~ 50Hz	
Rating Conditions	Running Amps.	A	0.28	0.44	4.02	4.8
	Power Input	kW	0.066	0.113	2.57	2.80
Full Load Conditions	Running Amps.	A	0.40	0.55	4.85	5.6
	Power Input	kW	0.083	0.120	3.18	3.40

Rating Conditions: Indoor Air Temperature 27°C DB / 19°C WB
Outdoor Air Temperature 35°C DB
Full Load Conditions: Indoor Air Temperature 32°C DB / 23°C WB
Outdoor Air Temperature 43°C DB

Indoor Unit **FCR518CL**
Outdoor Unit **AER518SCL3**

			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			230 V ~ 50Hz		400 V – 3N ~ 50Hz	
Rating Conditions	Running Amps.	A	0.33	0.40	2.9	3.6
	Power Input	kW	0.071	0.082	1.847	**2.0**
Full Load Conditions	Running Amps.	A	0.33	0.40	3.37	4.1
	Power Input	kW	0.071	0.082	2.247	2.4

Rating Conditions: Indoor Air Temperature 27°C DB / 19°C WB
Outdoor Air Temperature 35°C DB
Full Load Conditions: Indoor Air Temperature 32°C DB / 23°C WB
Outdoor Air Temperature 43°C DB

Indoor Unit **FCR522CL**
Outdoor Unit **AER522SCL3**

			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			230 V ~ 50Hz		400 V – 3N ~ 50Hz	
Rating Conditions	Running Amps.	A	0.28	0.44	4.02	4.8
	Power Input	kW	0.066	0.113	2.57	2.80
Full Load Conditions	Running Amps.	A	0.40	0.55	4.85	5.6
	Power Input	kW	0.083	0.120	3.18	3.40

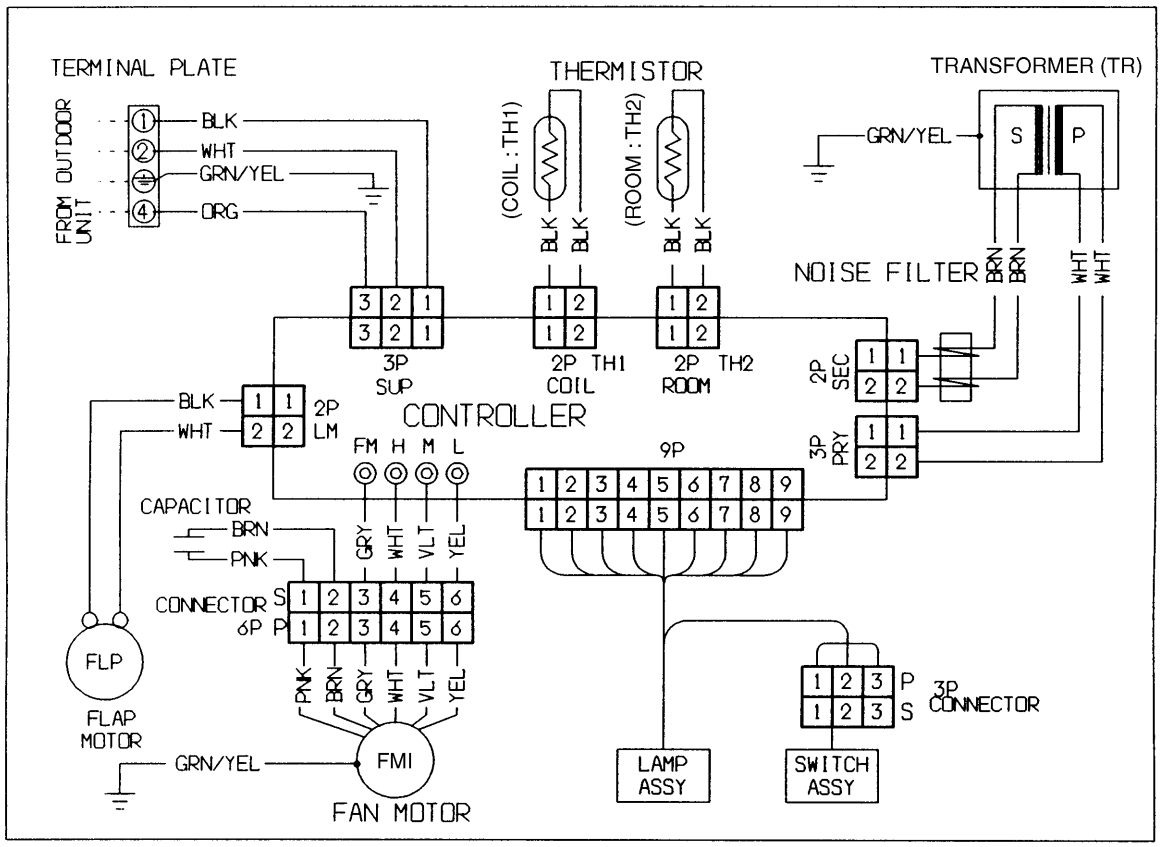
Rating Conditions: Indoor Air Temperature 27°C DB / 19°C WB
Outdoor Air Temperature 35°C DB
Full Load Conditions: Indoor Air Temperature 32°C DB / 23°C WB
Outdoor Air Temperature 43°C DB

6-2 Electric Wiring Diagrams

Indoor Unit **FCR518CL**
FCR522CL

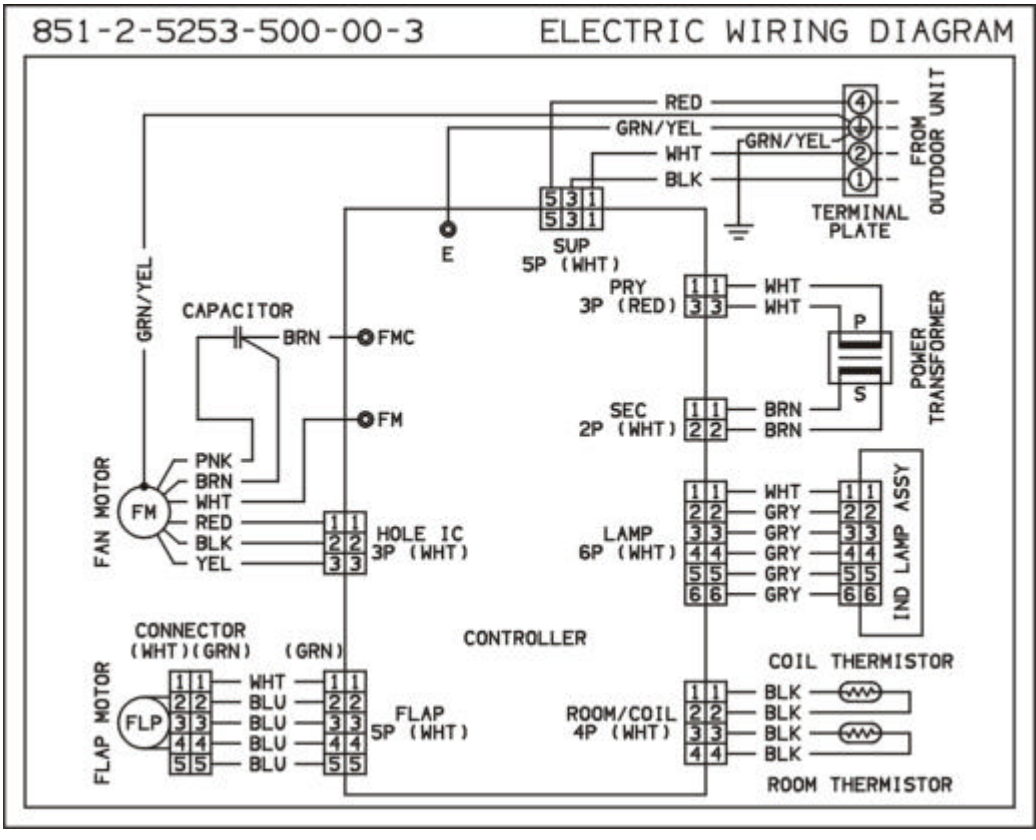
WARNING

To avoid electrical shock hazard, be sure to disconnect power before checking, servicing and/or cleaning any electrical parts



Indoor Unit **AWR518CL**

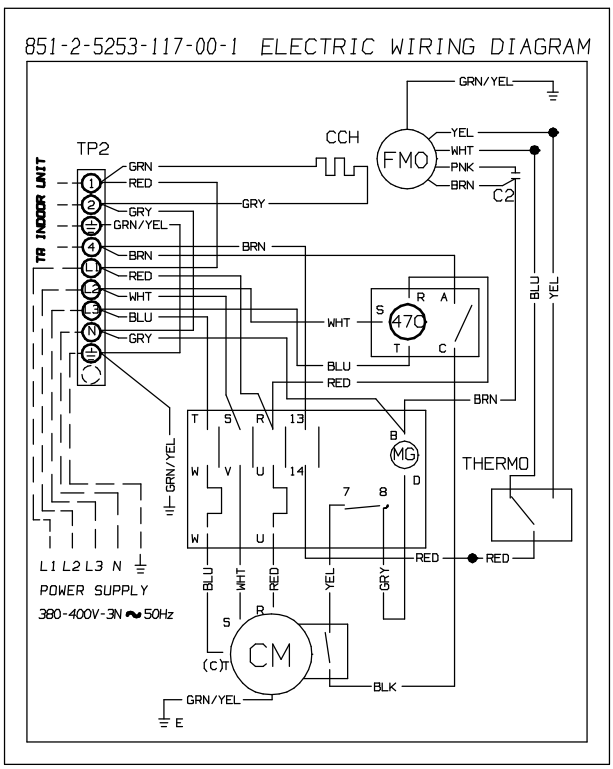
AWR522CL



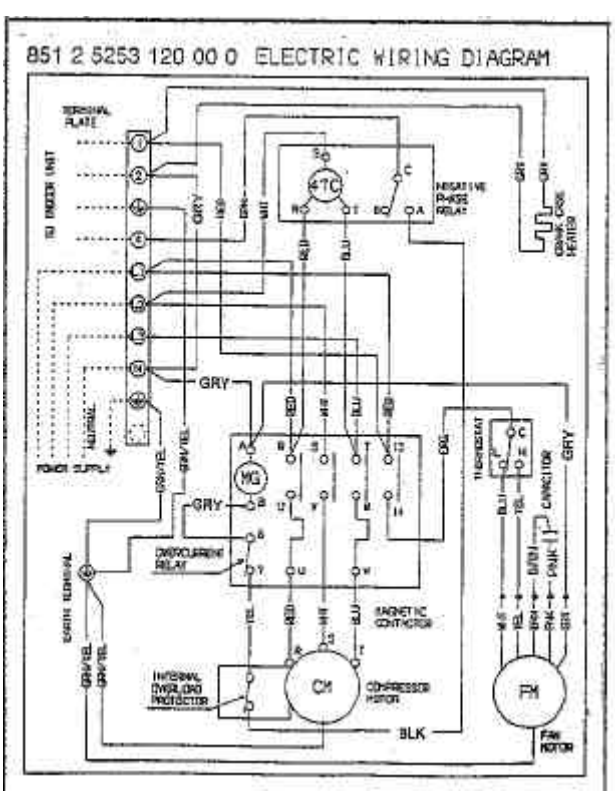
WARNING

To avoid electrical shock hazard, be sure to disconnect power before checking, servicing and/or cleaning any electrical parts

Outdoor Unit **AER518SC3**



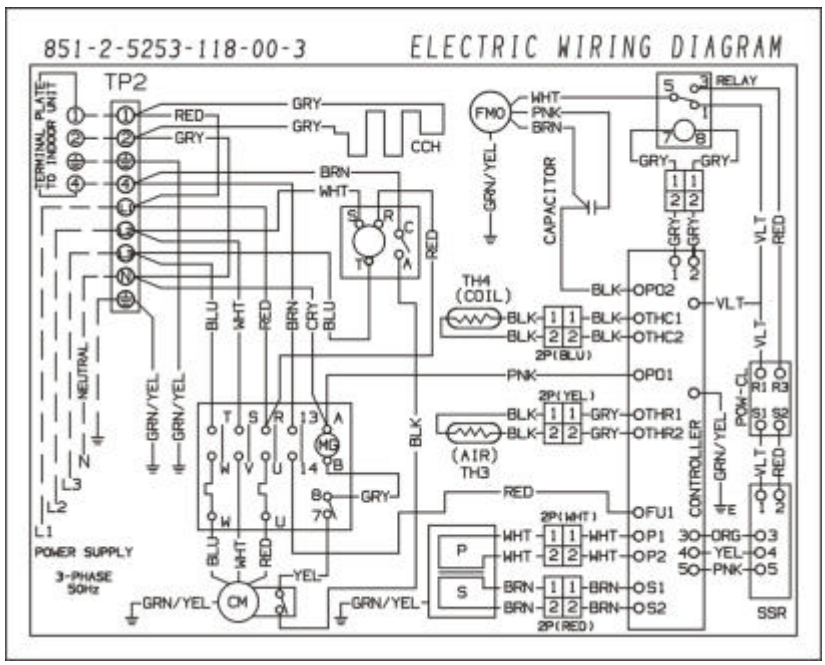
AER522SC3



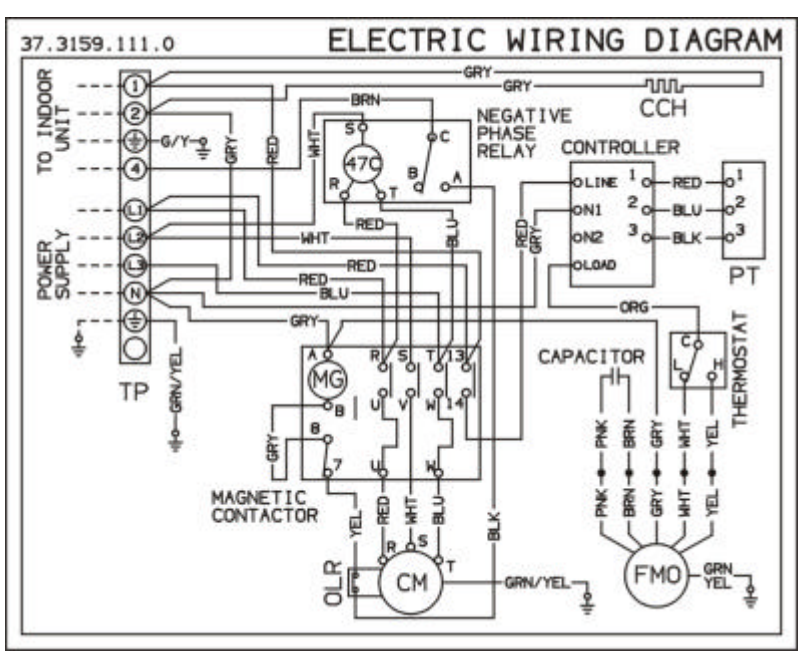
WARNING

To avoid electrical shock hazard, be sure to disconnect power before checking, servicing and/or cleaning any electrical parts

Outdoor Unit **AER518SCL3**



AER522SCL3



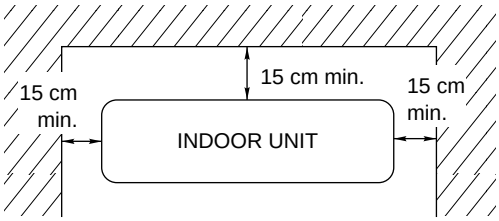
7. INSTALLATION INSTRUCTIONS

7-1. Installation Site Selection

Indoor Unit

WARNING

To prevent abnormal heat generation and the possibility of fire, don't place obstacles, enclosures and grills in front of or surrounding the air conditioner in a way that may block air flow.



Front View

Fig.1

AVOID:

- direct sunlight.
- nearby heat sources that may affect performance of the unit.
- areas where leakage of flammable gas may be expected.
- places where large amounts of oil mist exist.

DO:

- select an appropriate position from which every corner of the room can be uniformly air-conditioned. (High on a wall is best)
- select a location that will hold the weight of the unit.
- select a location where tubing and drain pipe have the shortest run to the outside.
- allow room for operation and maintenance as well as unrestricted air flow around the unit. (Fig. 1)
- install the unit within the maximum elevation difference (H) above or below the outdoor unit and within a total tubing length (L) from the outdoor unit as detailed Table 1 and Fig. 2a.

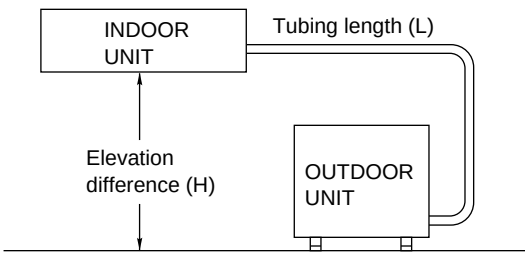


Fig. 2a

CAUTION

For stable operation of the air conditioner, do not install wall-mounted type indoor units less than 1.5m from floor level.

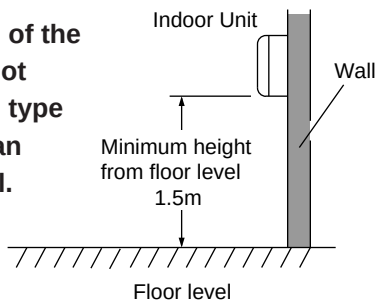


Fig. 2b

Table 1

Model	Max. Allowable Tubing Length at Shipment (m)	Limit of Tubing Length (L) (m)	Limit of Elevation Difference (H) (m)	Required Amount of Additional Refrigerant (g/m)*
AWR518CL/FCR518CL	7.5	20	7	25
AWR522CL/FCR522CL	7.5	30		

***** If total tubing length becomes 7.5 to 20 m (max.), charge additional refrigerant (R407c) by 25 g/m. No additional charge of compressor oil is necessary.

Outdoor Unit

AVOID:

- heat sources, exhaust fans, etc. (Fig. 3)
- damp, humid or uneven locations.

DO:

- choose a place as cool as possible.
- choose a place that is well ventilated.
- allow enough room around the unit for air intake/exhaust and possible maintenance. (Figs. 4a to 4c)
- provide a solid base (concrete block, 10 × 40 cm beams or equal), a minimum of 10 cm above ground level to reduce humidity and protect the unit against possible water damage and decreased service life. (Fig.5a and 5b)
- use lug bolts or equal to bolt down unit, reducing vibration and noise.

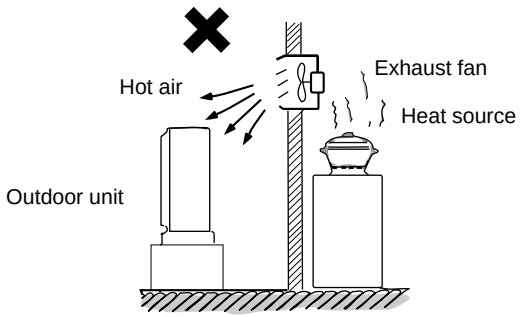
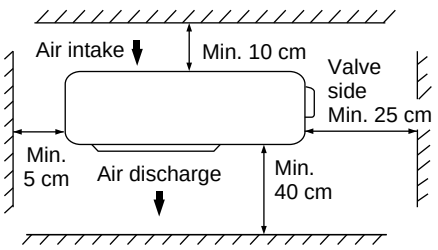


Fig. 3

Required space around the unit.

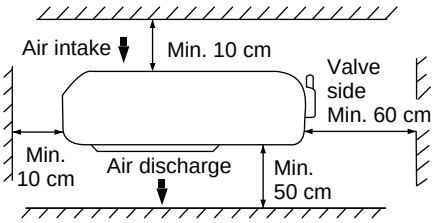
AER518SCL3 mod.



Top View

Fig. 4a

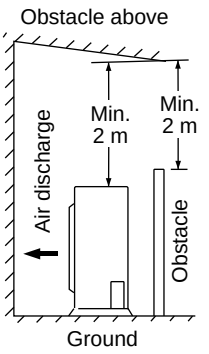
AER522SCL3 mod.



Top View

Fig. 4b

AER518/522SCL3 mod.



Side View

Fig. 4c

AER518SCL3 mod.

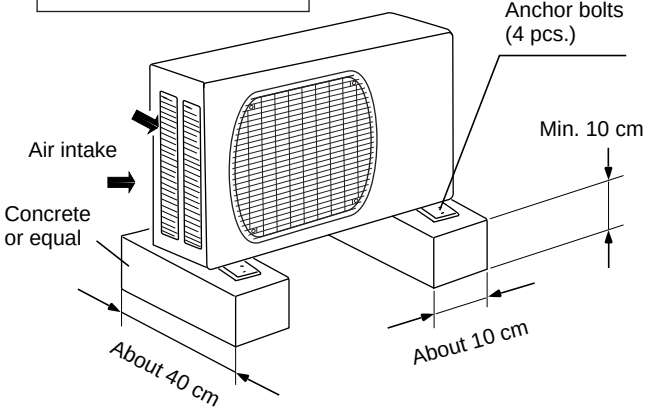


Fig. 5a

AER522SCL3 mod.

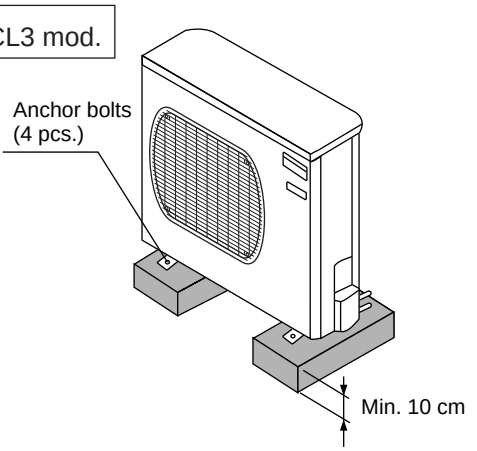


Fig. 5b

7-2. Remote Control Unit Installation Position

The remote control unit can be operated from either a non-fixed position or a wall-mounted position.

To ensure that the air conditioner operates correctly, do not install the remote control unit in the following places:

- In direct sunlight
- Behind a curtain or other place where it is covered
- More than 8 m away from the air conditioner
- In the path of the air conditioner's airstream
- Where it may become extremely hot or cold
- Where it may be subject to electrical or magnetic interference

Mounting on a Wall

a) Removable mounting

1) Momentarily hold the remote control unit at the desired mounting position.
2) Confirm that the air conditioner responds correctly when you press keys on the remote control from that position.
3) After confirming correct operation, use a screwdriver to screw the supplied special mounting screw into the wall. (Fig.6a)
4) Hang the remote control unit from the mounting screw.

b) Non-removable mounting

1) Momentarily hold the remote control unit at the desired mounting position.
2) Confirm that the air conditioner responds correctly when you press keys on the remote control from that position.
3) After confirming correct operation, use a screwdriver to screw the supplied special mounting screw into the wall. (Fig.6a)
4) Remove the remote control cover by sliding it downward.
5) Remove the batteries of the remote control unit.
6) Use a screwdriver to screw the remote control unit securing screw into the wall through the hole in the battery compartment. (Fig.6b)
7) Replace the batteries.
8) Again confirm that the remote control unit operates correctly.

Removable mounting

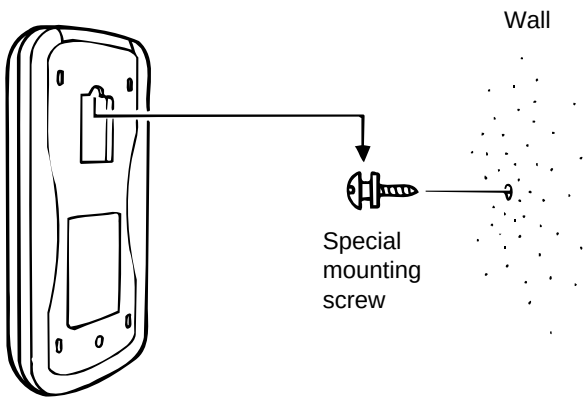


Fig.6a

Non-removable mounting

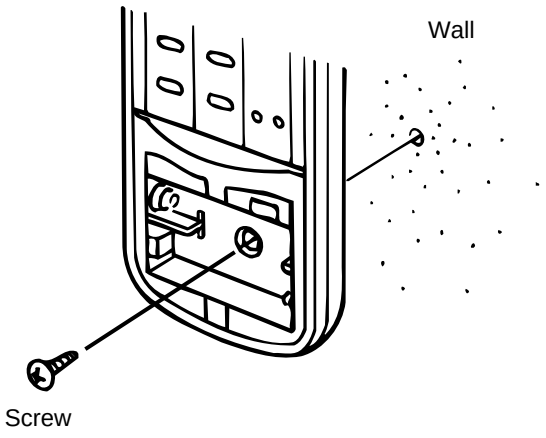


Fig.6b

7-3. Recommended Wire Length and Size

Regulations on wiring diameter differ from locality to locality. For field wiring requirements, please refer to your local electrical codes. Carefully observe these regulations when carrying out the installation.

Table 2 lists recommended wire lengths and cross section area for power supply systems.

NOTE

Refer to the WIRING SYSTEM DIAGRAM for the meaning of "A" and "B" in Table 2.

Table 2

Cross-Sectional Area (mm^2) / Model	(A) Power Supply Wiring Length (m)	(B) Power Line	Fuse or Circuit Breaker Capacity
	2.5 mm^2	2.5 mm^2	
AER518SC3 / AER518SCL3	22	20	20 A
AER522SC3 / AER522SCL3	16	30	20 A

WARNING

- **Be sure to comply with local codes on running the wire from the indoor unit to the outdoor unit (size of wire and wiring method, etc.).**
- **Each wire must be firmly connected.**
- **No wire should be allowed to touch refrigerant tubing, the compressor, or any moving part.**

WARNING

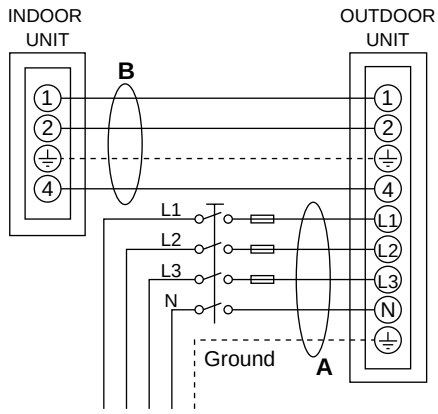
To avoid the risk of electric shock, each air conditioner unit must be grounded.

CAUTION

- **Be sure to connect the power supply line to the outdoor unit as shown in the wiring diagram. The indoor unit draws its power from the outdoor unit.**

WIRING SYSTEM DIAGRAM

AER518SC3
AER522SC3
AER518SCL3
AER522SCL3

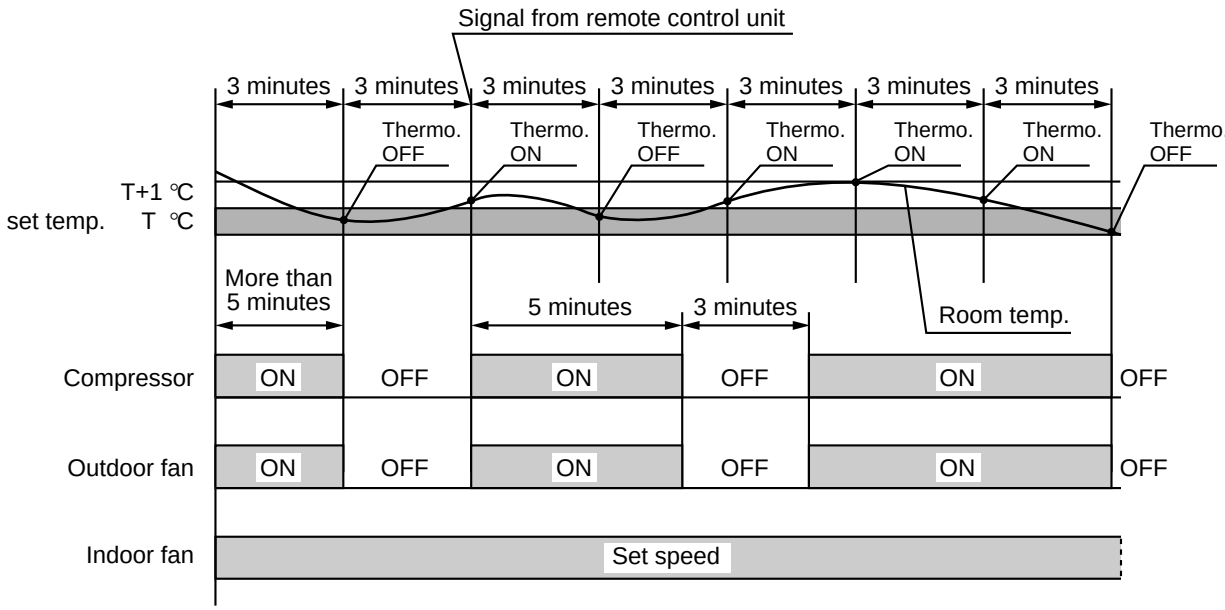


Power supply
380 – 400 V – 3N ~ 50Hz

8. FUNCTION

8-1. Room Temperature Control

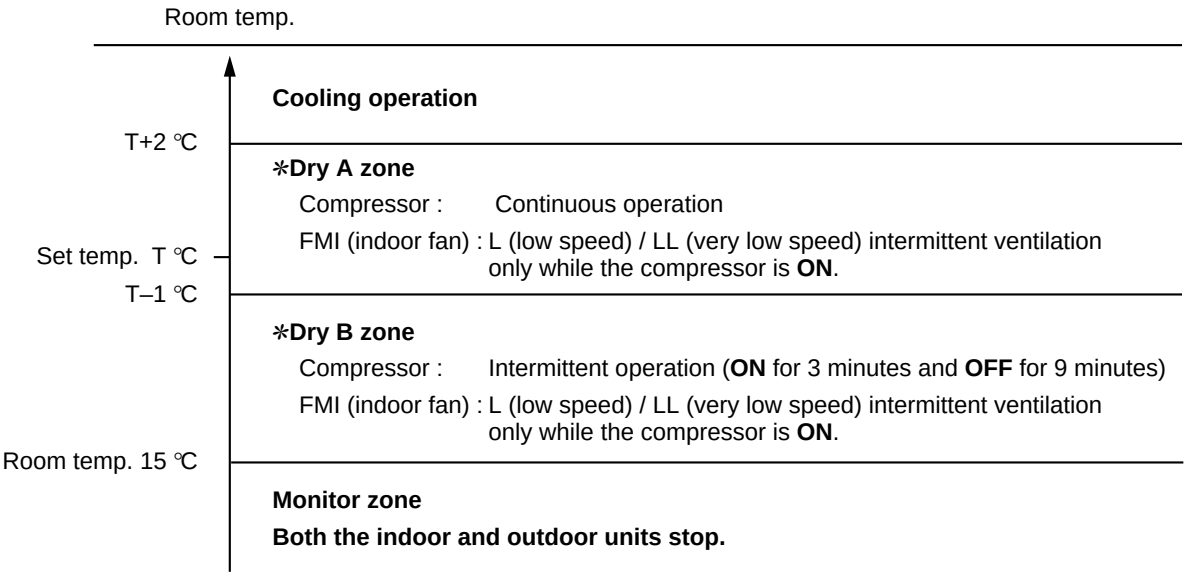
- Room temperature control is obtained by cycling the compressor ON and OFF under control of the room temperature sensor in the remote control unit.
- The room temperature (and other information) is transmitted every 3 minutes by the remote control unit to the controller in the indoor unit.



- The control circuit will not attempt to turn the compressor ON until the compressor has been OFF for at least 3 minutes. To protect the compressor from stalling out when trying to start against the high side refrigerant pressure, the control circuit has a built-in automatic time delay to allow the internal pressure to equalize.
- As a protective measure, the control circuit switches the compressor OFF after 5 minutes or more of compressor operation.
- Thermo. ON : When the room temperature is above T + 1°C (T°C is set temperature).
  Compressor → ON
- Thermo. OFF : When the room temperature is equal to or below set temperature T°C.
  Compressor → OFF

8-2. Dry Operation (Dehumidification)

- Dry operation uses the ability of the cooling cycle to remove moisture from the air, but by running at low level to dehumidify without greatly reducing the room temperature. The air conditioner repeats the cycle of turning ON and OFF automatically as shown in the chart below according to the room temperature.

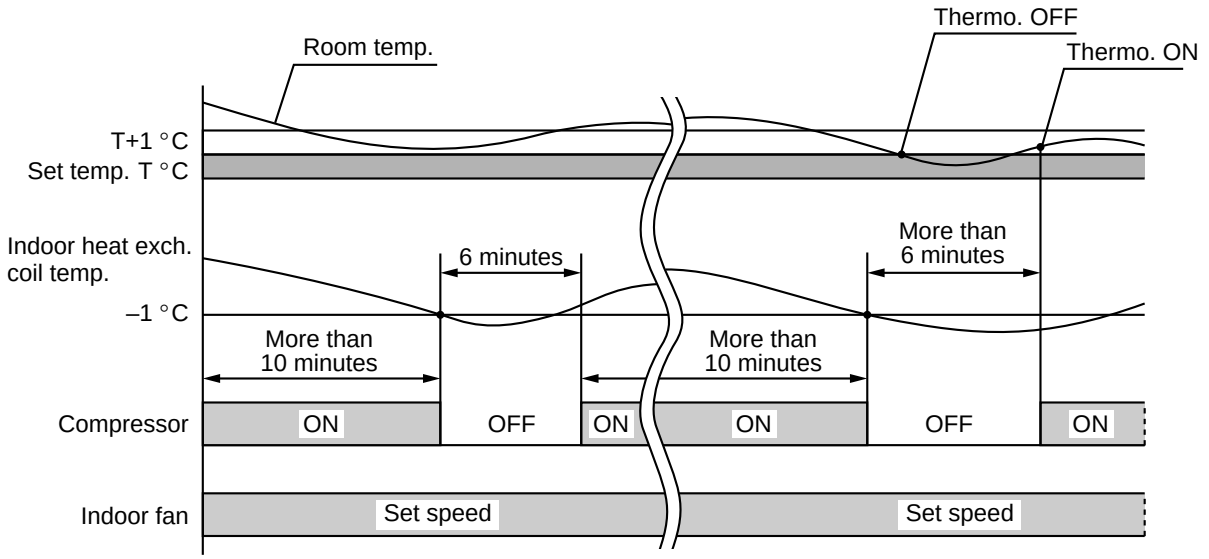

Room temp.
Cooling operation
T+2 ℃
✻Dry A zone
Compressor : Continuous operation
FMI (indoor fan) : L (low speed) / LL (very low speed) intermittent ventilation only while the compressor is ON.
Set temp. T ℃
T–1 ℃
✻Dry B zone
Compressor : Intermittent operation (ON for 3 minutes and OFF for 9 minutes)
FMI (indoor fan) : L (low speed) / LL (very low speed) intermittent ventilation only while the compressor is ON.
Room temp. 15 ℃
Monitor zone
Both the indoor and outdoor units stop.

NOTE

- Intermittent ventilation occurs by switching the indoor fan speed between L ↔ LL.
- Dry operation does not occur when the room temperature is under 15°C, which is the monitor zone.
- When the compressor stops, the indoor fan stops as well.

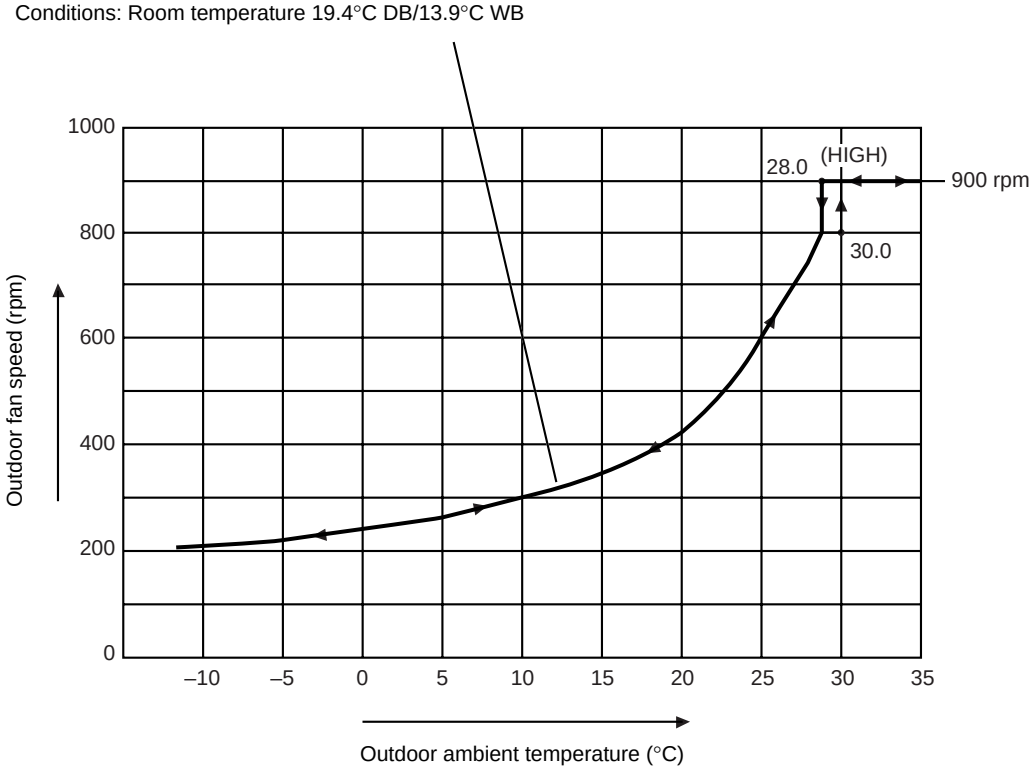
8-3. Freeze Prevention

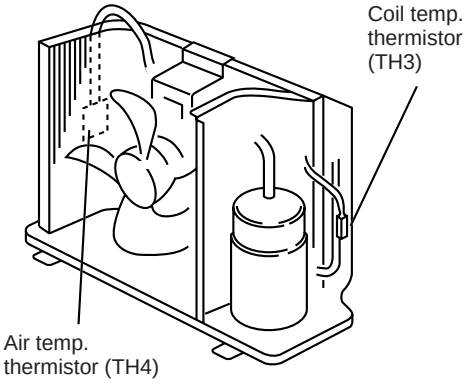
- This function prevents freezing of the indoor heat exchange coil.
- When the compressor has been running for 10 minutes or more and the temperature of the indoor heat exchange coil falls below –1°C, the control circuit stops the compressor for at least 6 minutes. The compressor does not start again until the temperature rises above 8°C or 6 minutes has elapsed.



8-4 LOW AMBIENT FAN SPEED CONTROL < FOR AER518SCL3 >

- This function protects the compressor from being damaged due to flowback of the liquid refrigerant to the compressor when the outdoor temperature is very low.
- When the air temp. thermistor (TH4) on the outdoor units detects a change in temperature, the solid state relay (SSR) inside the electrical component box activates to control the fan speed accordingly.
- As the outdoor temperature decreases and drops below 28.0°C, the outdoor fan speed starts to gradually slow down following an oblique line as in the diagram below.
- Outdoor fan speed changes more or less according to the room temperature.
- When the outdoor temperature goes above 30.0°C, this fan speed control does not work.





(FOR AER522SCL3)

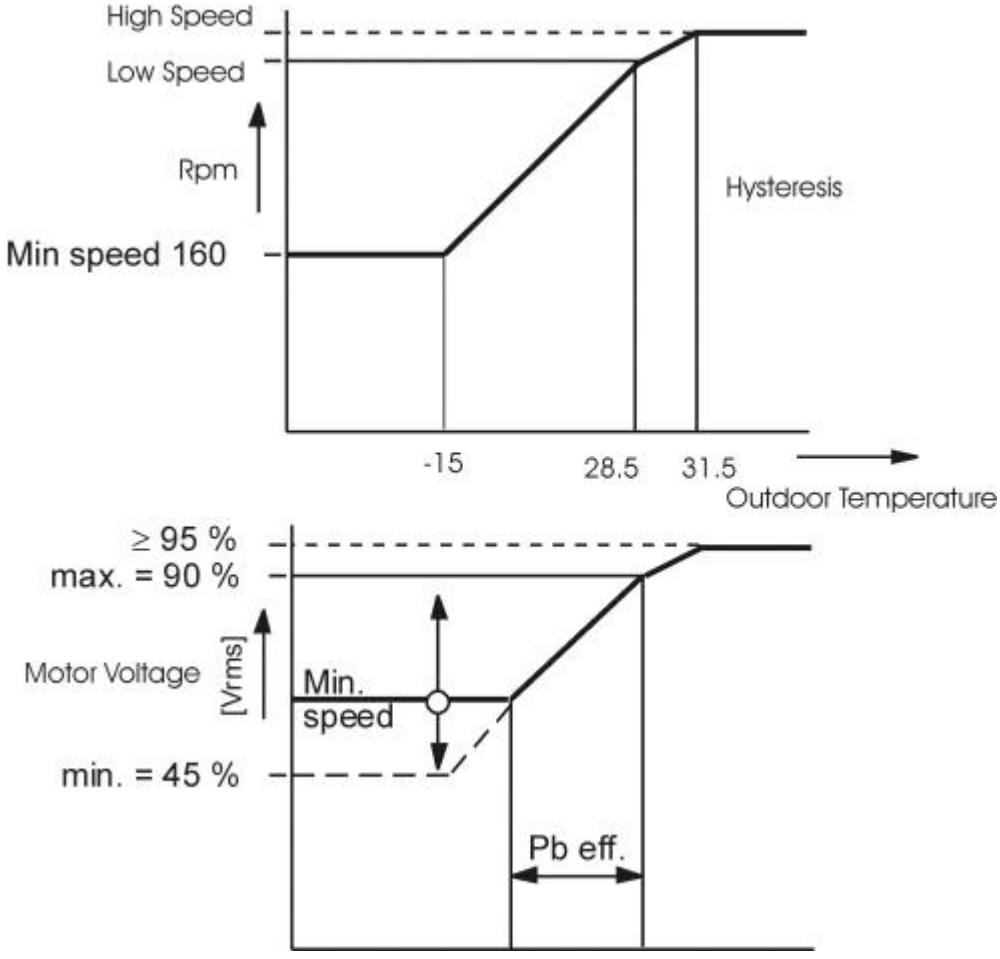
This function protects the compressor from being damaged due to flowback of the liquid refrigerant to the compressor when the outdoor temperature is very low.

When the outdoor air tem. thermistor (TH4) on the outdoor unit detects a change in temperature,(below 28.5°C) the outdoor fan speed goes to low speed of the motor.

When the Liquid Pressure decresases and drops below 16 bar,the outdoor fan speed startito gradually slow down following the line as in the diagram below.

Outdoor fan speed changes more or less according to the liquid pressure,the liquid pressure changes as a consequence of the outdoor ambient temperature.

When the outdoor temperature goes above 31.5°C,the fan speed goes to the high speed of the motor.



9. REFRIGERANT R407C : SPECIAL PRECAUTIONS WHEN SERVICING UNIT

9-1. Characteristics of new refrigerant R407C

9-1-1. What is new refrigerant R407C

R407C is a new refrigerant that contains three types of non-azeotropy-type mixed refrigerant which does not adversely affect the Earth's ozone layer. Its refrigeration capacity and energy efficiency are about the same level as the conventional refrigerant R22

9-1-2. Components (mixing proportions)

HFC32 (23%) / HFC125 (25%) / HFC134a (52%)

9-1-3. Characteristics

- Less toxic, more chemically stable refrigerant.
- Composition of refrigerant R407C changes whether it is in gaseous phase or liquid phase. Thus, when there is a refrigerant leak the basic performance of the air conditioner may be degraded because of a change in composition of the remaining refrigerant. ***Therefore, do not add new refrigerant.*** Instead, recover the remaining refrigerant with the refrigerant recovery unit. Then, after evacuation, totally recharge the specified amount of refrigerant with the new refrigerant at its normal mixed composition state (liquid phase).
- When refrigerant R407C is used, the composition will differ depending on whether it is in gaseous or liquid phase, and the basic performance of the air conditioner will be degraded if it is charged while the refrigerant is in gaseous state. ***Thus, always charge the refrigerant while it is in the liquid phase.***

- **Ether-type oil is used for the compressor oil for R407C-type units, which is different from the mineral oil used for R22. Thus more attention to moisture prevention and faster replacement work compared with conventional models are required.**

9-2. Checklist before servicing

- **Tubing precautions**
  Refrigerant R407C is more easily affected by dust or moisture compared with R22, thus be sure to temporarily cover the ends of the tubing with caps or tape prior to installation.
- **No addition of compressor oil for R407C**
  No additional charge of compressor oil is permitted.
- **No use of refrigerant other than R407C**
  Never use a refrigerant other than R407C.
- **If refrigerant R407C is exposed to fire**
  Through welding, etc., toxic gas may be released when R407C refrigerant is exposed to fire. Therefore, be sure to provide ample ventilation during installation work.
- **Caution in case of R407C leak**
  Check for possible leak points with the special leak detector for R407C. If a leak occurs inside the room, immediately provide thorough ventilation.

9-3. Tools specifically for R407C

● **For servicing, use the following tools for R407C**

Tool Distinction	Tool Name
Tools specifically for R407C	• Gauge manifold • Charging hose • Gas leak detector • Refrigerant cylinder • Charging cylinder • Refrigerant recovery unit • Vacuum pump with anti-reverse flow **(✻1)** (Solenoid valve-installed type, which prevents oil from flowing back into the unit when the power is off, is recommended.) • Vacuum pump **(✻2)** ..... can be used if the following adapter is attached. • Vacuum pump adapter (reverse-flow prevention adapter) **(✻3)**. (Solenoid valve-installed adapter attached to a conventional vacuum pump.) • Electronic scale for charging refrigerant • Flare tool
Tools which can be commonly used for R22 and R407C	• Bender • Torque wrench • Cutter, Reamer • Welding machine, nitrogen gas cylinder

CAUTION

● **The above tools specifically for R407C must not be used for R22. Doing so will cause malfunction of the unit.**

● **For the above vacuum pump (✻1, ✻2) and vacuum pump adapter (✻3) , those for R22-type units can be used for R407C-type. However, they must be used exclusively for R407C and never alternately with R22.**

9-4. For tubing installation procedures

● When the tubes are connected, ***always apply HAB oil on the flare portions to improve the sealing of tubing.***

The following is the **HAB oil** generally used:
Esso: ZERICE S32

NOTE For details on tubing installation procedures, refer to the installation manuals attached to the indoor unit and outdoor unit.

9-5. In case of compressor malfunction

CAUTION

- **Should the compressor malfunction, be sure to replace compressor as quickly as possible.**
- **Use only the tools indicated exclusively for R407C. → See "10-3. Tools specifically for R407C".**

9-5-1.Procedure for replacing compressor

(1) **Recovering refrigerant**

- Any remaining refrigerant inside the unit should not be released to the atmosphere, but recovered using the refrigerant recovery unit for R407C.
- Do not reuse the recovered refrigerant, since will contain impurities.

(2) **Replacing compressor**

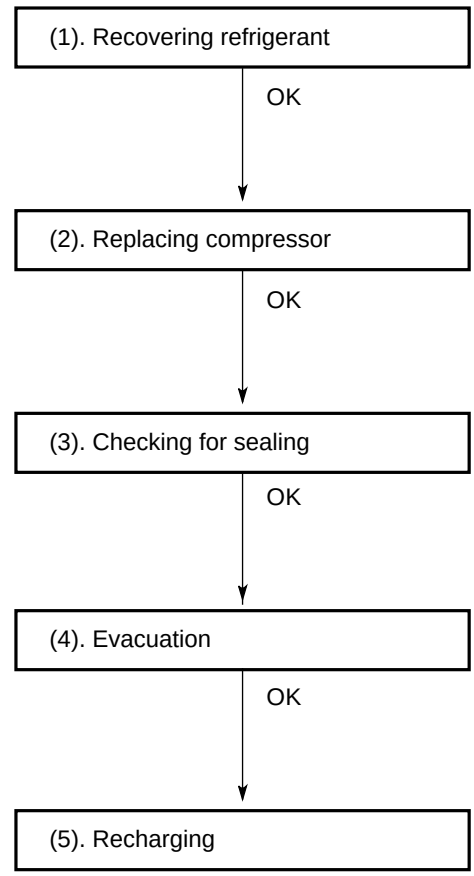
- Soon after removing pinched pipes of both discharge and suction tubes of the new compressor, replace it quickly.

(3) **Checking for sealing**

- Use nitrogen gas for the pressurized gas, and never use a refrigerant other than R407C. Also do not use oxygen or any flammable gas.

(4) **Evacuation**

- ***Use a solenoid valve-installed vacuum pump*** so that even if power is cut off in the middle of evacuation of air due to a power interruption, the valve will prevent the pump oil from flowing back.
- The equipment may be damaged if moisture remains in the tubing, thus carry out the evacuation thoroughly.
- When using a vacuum pump with exhaust air volume more than 25L/min. and ultimate vacuum pressure rate of 0.05Torr:



Standard time of evacuation

Length of tubing	Less than 10 m	More than 10 m
Time	More than 10 min.	More than 15 min.

(5) **Recharging**

- ***Be sure to charge the specified amount of refrigerant in liquid state*** using the service port of wide tube service valve. The proper amount is listed on the unit's nameplate.

  When the entire amount cannot be charged all at once, charge gradually while operating the unit in Cooling Operation.

CAUTION

- **Never charge a large amount of liquid refrigerant at once to the unit. This may cause damage to the compressor.**

- When charged with a refrigerant cylinder, use the electronic scale for charging refrigerant. In this case, if the volume of refrigerant in the cylinder becomes less than 20% of the fully-charged amount, the composition of the refrigerant starts to change. Thus, ***do not use the refrigerant if the amount in the refrigerant cylinder is less than 20%.***

  Also, charge the minimum necessary amount to the cylinder before using it for charging the air conditioning unit.

  Example:
  In case of charging refrigerant to a unit requiring 0.76Kg using a capacity of 10Kg-cylinder, the minimum necessary amount for the cylinder is:

  0.76 + 10 x 0.20 = 2.76Kg

  For the remaining refrigerant, refer to the instructions of the refrigerant manufacturer.

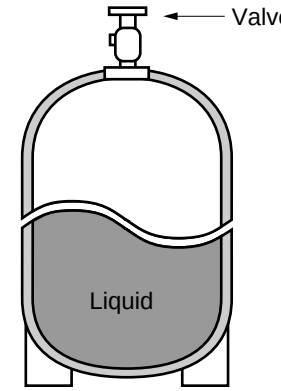
- If using a charging cylinder, transfer the specified amount of liquid refrigerant from the refrigerant cylinder to the charging cylinder.

  Prepare an evacuated charging cylinder beforehand.

CAUTION

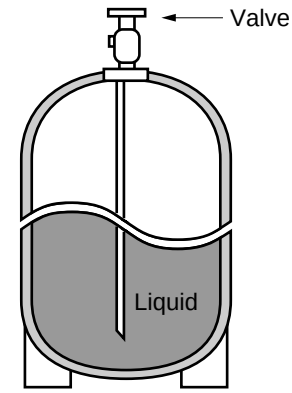
- **To prevent the composition of R407C from changing, never bleed the refrigerant gas into the atmosphere while transferring the refrigerant. (Fig. 3)**

Do not use the refrigerant if the amount in the charging cylinder is less than 20%.



Single valve
Charge the liquid refrigerant with the cylinder in the up-side-down position.

Fig. 1



Single valve (with siphon tube)
Charge with the cylinder in the normal position.

Fig. 2

Configurations and characteristics of cylinders

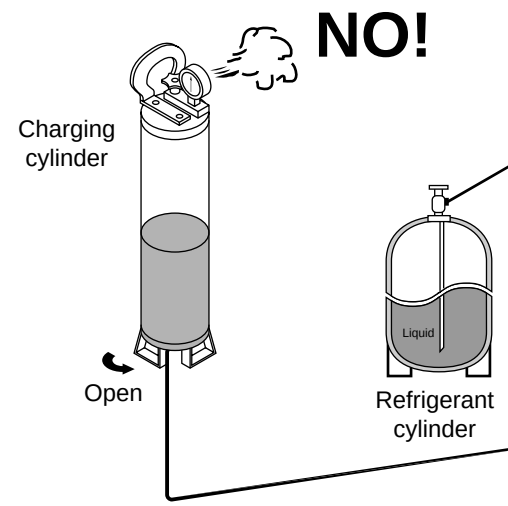


Fig.3

9-6. In case refrigerant is leaking

CAUTION

● **Never attempt to charge additional refrigerant when refrigerant has been leaking from the unit. Follow the procedure described below to locate points of leaks and carry out repairs, then recharge the refrigerant.**

(1) **Detecting Leaks**

- Use the detector for R407C to locate refrigerant leak points.

(2) **Recovering refrigerant**

- Never release the gas to the atmosphere, recover residual refrigerant using the refrigerant recovery unit for R407C, instead.
- Do not reuse the recovered refrigerant because its composition will have been altered.

(3) **Welding leaking points**

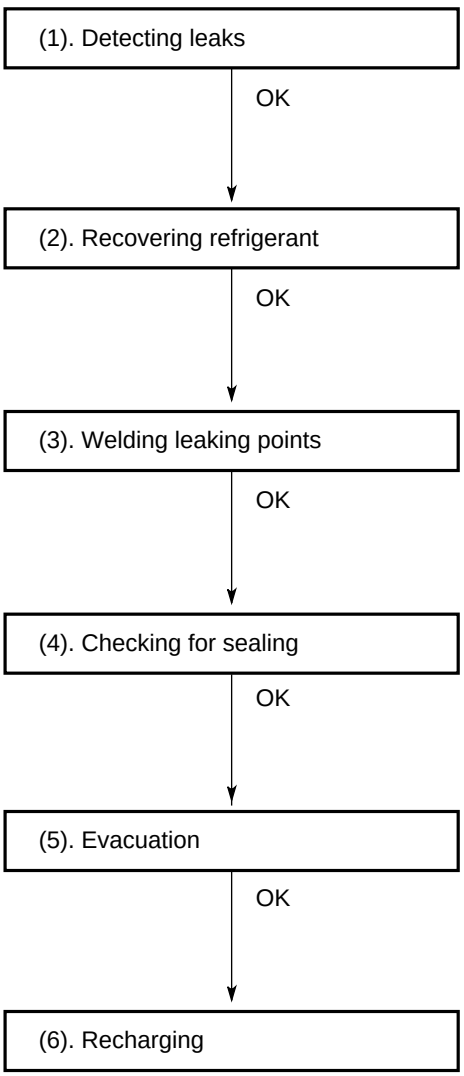
- Confirm again that no residual refrigerant exists in the unit before starting welding.
- Weld securely using flux and wax for R407C.
- Prevent oxide film from forming inside the tubes utilizing substitution with nitrogen (N2) in the refrigerant circuit of the unit. Leave ends of tubes open during welding.

(4) **Checking for sealing**

- Use nitrogen gas for the pressurized gas, and never use a refrigerant other than R407C. Also do not use oxygen or any flammable gas.

(5) **Evacuation**

- ***Use a solenoid valve-installed vacuum pump*** so that even if power is cut off in the middle of evacuation of air due to a power interruption, the valve will prevent the pump oil from flowing back.
- The equipment may be damaged if moisture remains in the tubing, thus carry out the evacuation thoroughly.
- When using a vacuum pump with exhaust air volume more than 25L/min. and ultimate vacuum pressure rate of 0.05Torr:



Standard time of evacuation

Length of tubing	Less than 10 m	More than 10 m
Time	More than 10 min.	More than 15 min.

(6) **Recharging**

- ***Be sure to charge the specified amount of refrigerant in liquid state*** using the service port of wide tube service valve. The proper amount is listed on the unit's nameplate.

  When the entire amount cannot be charged all at once, charge gradually while operating the unit in Cooling Operation.

CAUTION

- **Never charge a large amount of liquid refrigerant at once to the unit. This may cause damage to the compressor.**

- When charged with a refrigerant cylinder, use the electronic scale for charging refrigerant. In this case, if the volume of refrigerant in the cylinder becomes less than 20% of the fully-charged amount, the composition of the refrigerant starts to change. Thus, ***do not use the refrigerant if the amount in the refrigerant cylinder is less than 20%.***

Also, charge the minimum necessary amount to the cylinder before using it for charging the air conditioning unit.

Example:
In case of charging refrigerant to a unit requiring 0.76Kg using a capacity of 10Kg-cylinder, the minimum necessary amount for the cylinder is:

0.76 + 10 x 0.20 = 2.76Kg

For the remaining refrigerant, refer to the instructions of the refrigerant manufacturer.

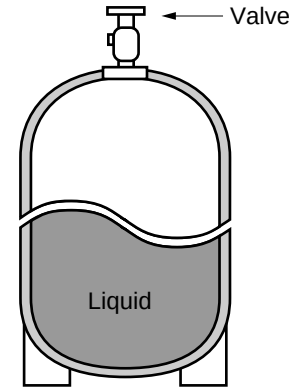
- If using a charging cylinder, transfer the specified amount of liquid refrigerant from the refrigerant cylinder to the charging cylinder.

  Prepare an evacuated charging cylinder beforehand.

CAUTION

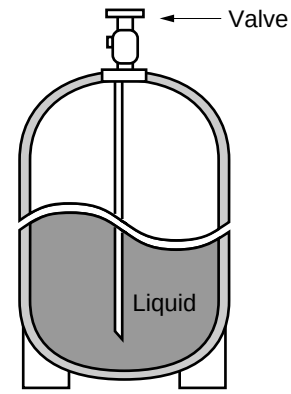
- **To prevent the composition of R407C from changing, never bleed the refrigerant gas into the atmosphere while transferring the refrigerant. (Fig. 6)**

Do not use the refrigerant if the amount in the charging cylinder is less than 20%.



Single valve
Charge the liquid refrigerant with the cylinder in the up-side-down position.

Fig. 4



Single valve (with siphon tube)
Charge with the cylinder in the normal position.

Fig. 5

Configurations and characteristics of cylinders

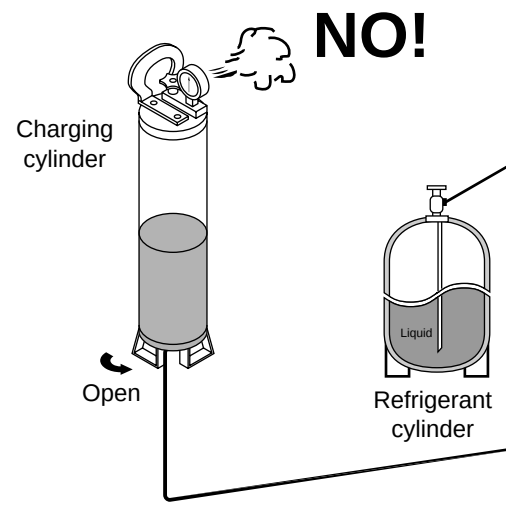


Fig. 6

9-7. Charging additional refrigerant

9-7-1.When tubes are extended

• Observe the proper amount of refrigerant as stated in this service manual or the installation manual that came with the indoor unit. ***Charge additional refrigerant in liquid state.***

● **Never charge additional refrigerant if refrigerant is leaking from the unit. Follow instructions given in "10-6. In case refrigerant is leaking" and completely carry out repairs. Only then should you recharge the refrigerant.**

9-8. Retro-fitting existing systems

9-8-1 Use of existing units

• ***Never use new refrigerant R407C for existing units which use R22.*** This will cause the air conditioner to operate improperly and may result in a hazardous condition.

9-8-2 Use of existing tubing

• If replacing an older unit that used refrigerant R22 with a R407C unit, ***do not use its existing tubing.*** Instead, completely new tubing must be used.

10. TROUBLESHOOTING

10-1. Check before and after troubleshooting

WARNING

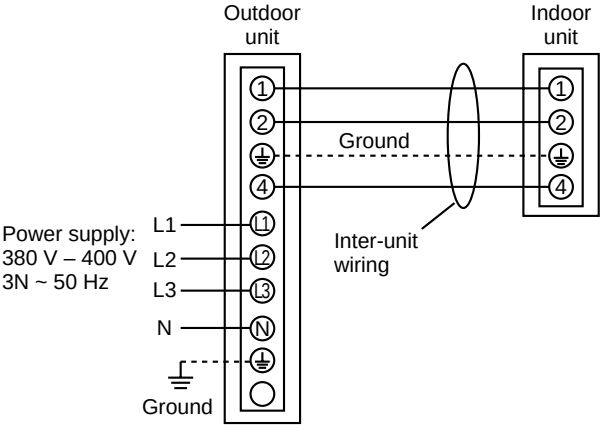
Hazardous voltage can cause ELECTRIC SHOCK or DEATH. Disconnect power or turn off circuit breaker before you start checking or servicing.

10-1-1. Check power supply wiring.

- Check that power supply wires are correctly connected to terminals **L** and **N** on the terminal plate in the outdoor unit.

THREEPHASE MODELS

- Check that power supply wires are correctly connected to terminals **L1, L2 , L3** and **N** on the terminal plate in the outdoor unit.



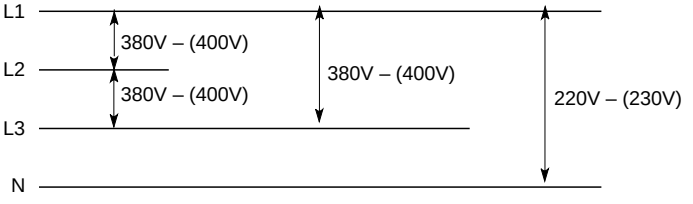
10-1-2. Check inter-unit wiring.

- Check that inter-unit wiring is correctly connected to the indoor unit from the outdoor unit.

10-1-3. Check power supply.

- Check that voltage is in specified range (±10% of the rating).
- Check that power is being supplied.

THREEPHASE MODELS



10-1-4. Check lead wires and connectors in indoor and outdoor units.

- Check that coating of lead wires is not damaged.
- Check that lead wires and connectors are firmly connected.
- Check that wiring is correct.

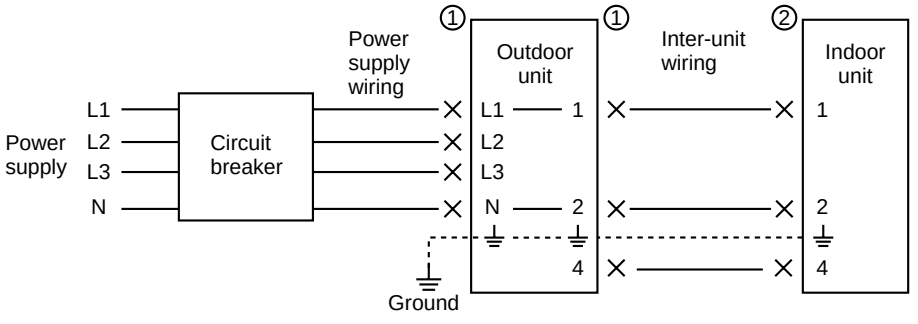
10-2. Air conditioner does not operate.

10-2-1. Circuit breaker trips (or fuse blows).

A. When the circuit breaker is set to ON, it is tripped soon. (Resetting is not possible.)

- There is a possibility of ground fault.
- Check insulation resistance.

If resistance value is 2MΩ or less, insulation is defective (“NO”).



*Set circuit breaker to OFF.

① Remove both power supply wires and inter-unit wires from terminal plate in outdoor unit.
- Measure insulation resistance of outdoor unit.

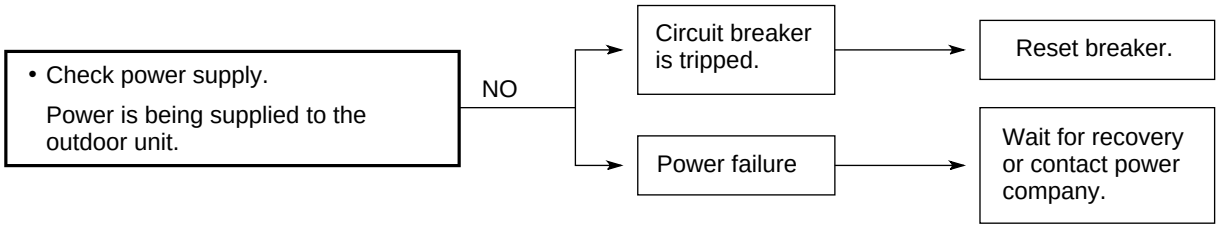
NO → Insulation of outdoor unit is defective.
- Measure insulation resistance of electrical parts in outdoor unit.

② Remove inter-unit wires from terminal plate in indoor unit.
- Measure insulation resistance of indoor unit.

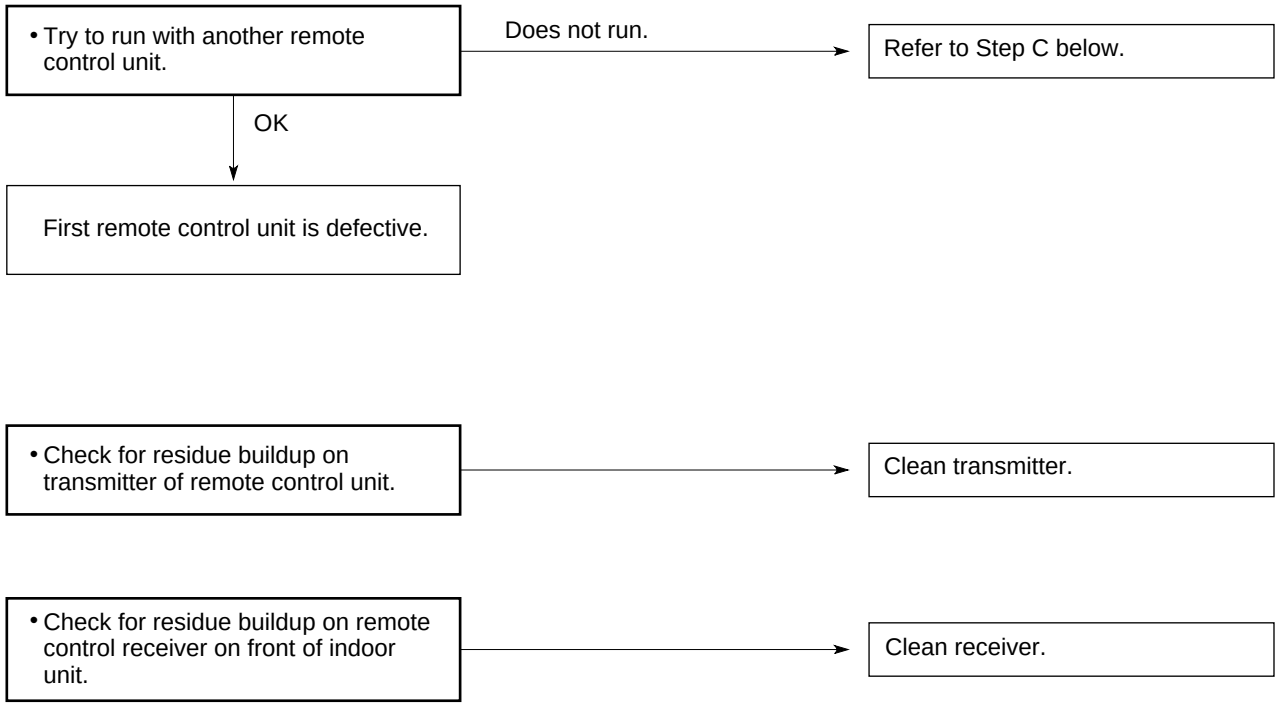
NO → Insulation of indoor unit is defective.
- Measure insulation resistance of electrical parts in indoor unit.

10-2-2. Neither indoor nor outdoor unit runs.

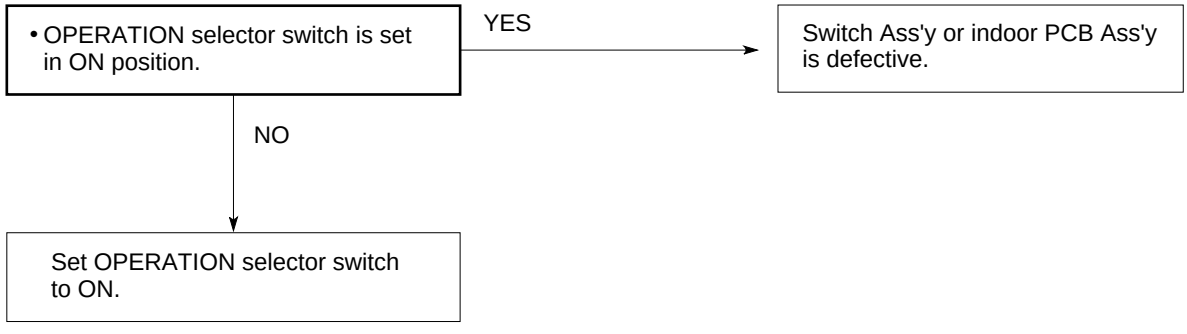
A. Power is not supplied.


• Check power supply.
Power is being supplied to the outdoor unit.
NO
Circuit breaker is tripped.
Reset breaker.
Power failure
Wait for recovery or contact power company.

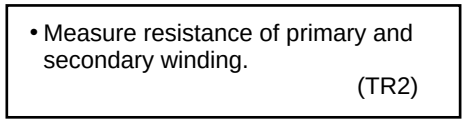
B. Check remote control unit.


• Try to run with another remote control unit.
Does not run.
Refer to Step C below.
OK
First remote control unit is defective.
• Check for residue buildup on transmitter of remote control unit.
Clean transmitter.
• Check for residue buildup on remote control receiver on front of indoor unit.
Clean receiver.

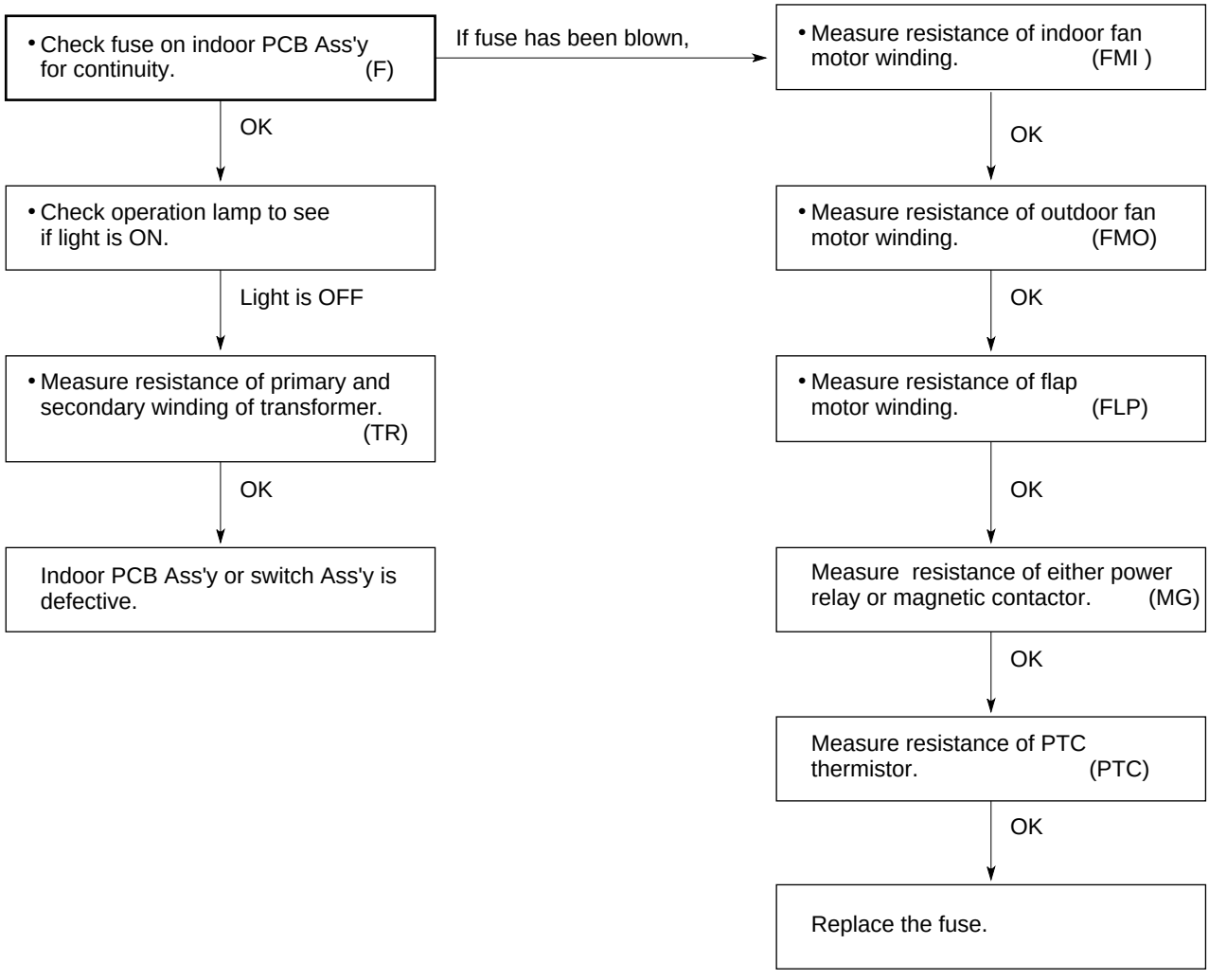
C. Check "OPERATION selector" switch in the indoor unit.


• OPERATION selector switch is set in ON position.
YES
Switch Ass'y or indoor PCB Ass'y is defective.
NO
Set OPERATION selector switch to ON.

D. Check transformer in indoor unit.



E. Check fuse on the indoor PCB Ass'y.

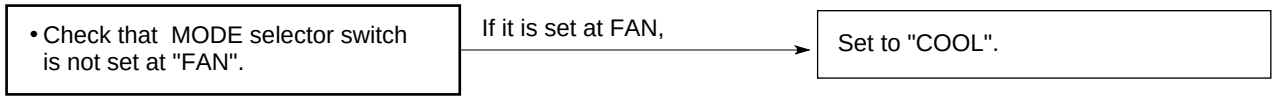

• Check fuse on indoor PCB Ass'y for continuity. (F)
If fuse has been blown,
• Measure resistance of indoor fan motor winding. (FMI)
OK
OK
• Check operation lamp to see if light is ON.
• Measure resistance of outdoor fan motor winding. (FMO)
Light is OFF
OK
• Measure resistance of primary and secondary winding of transformer. (TR)
• Measure resistance of flap motor winding. (FLP)
OK
OK
Indoor PCB Ass'y or switch Ass'y is defective.
Measure resistance of either power relay or magnetic contactor. (MG)
OK
Measure resistance of PTC thermistor. (PTC)
OK
Replace the fuse.

F. Check TIMER on the remote control unit.

• Timer is turned ON. Check to see if "ON" is displayed on remote control
YES
Press TIMER SELECT button to select NORM.
(NORM. is position when neither ON nor OFF appears on display.)

10-2-3. Only outdoor unit does not run.

A. Check MODE selector switch of remote control unit.

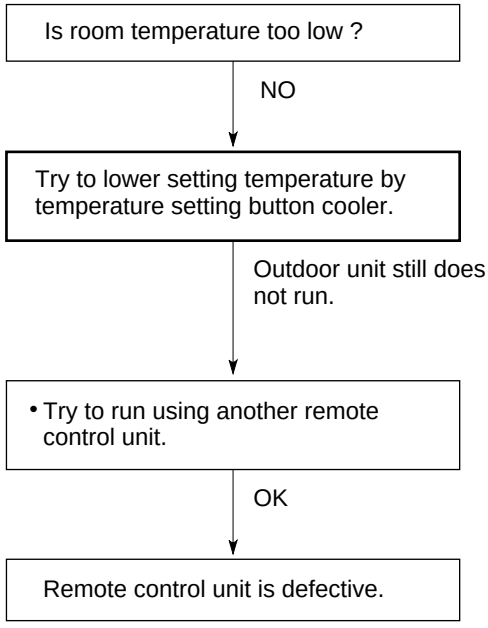


NOTE

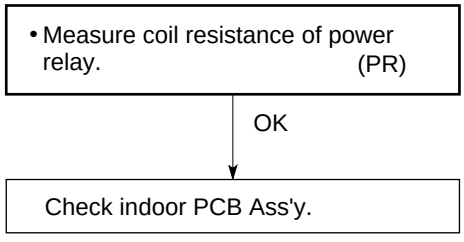
Outdoor unit does not run when air conditioner is in following conditions.

- During thermo OFF (when the room temperature is below the set temperature).
- During freeze prevention (for at least 6 minutes).

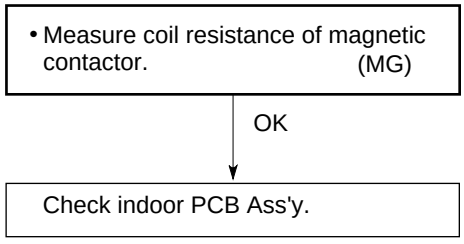
B. Check setting temperature.


Is room temperature too low ?
NO
Try to lower setting temperature by temperature setting button cooler.
Outdoor unit still does not run.
• Try to run using another remote control unit.
OK
Remote control unit is defective.

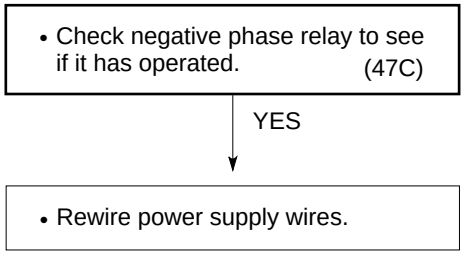
C. Check power relay in outdoor unit.



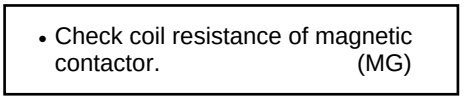
D. Check magnetic contactor in outdoor unit.



E. Check negative phase relay.

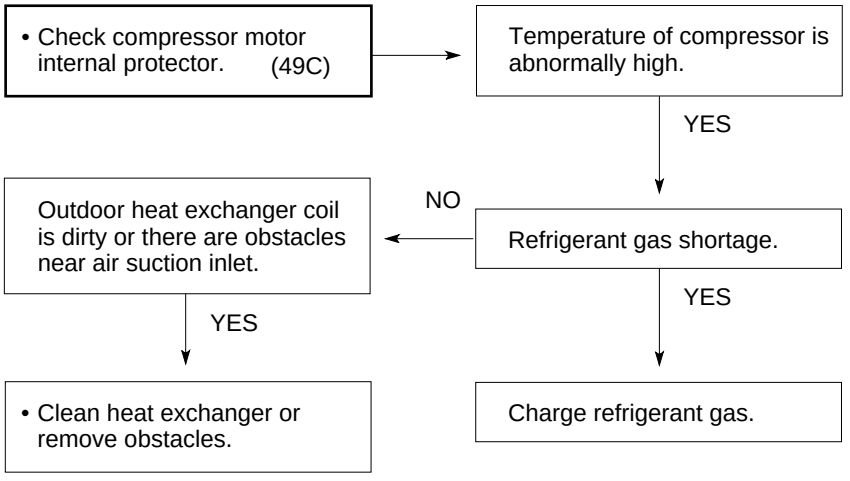


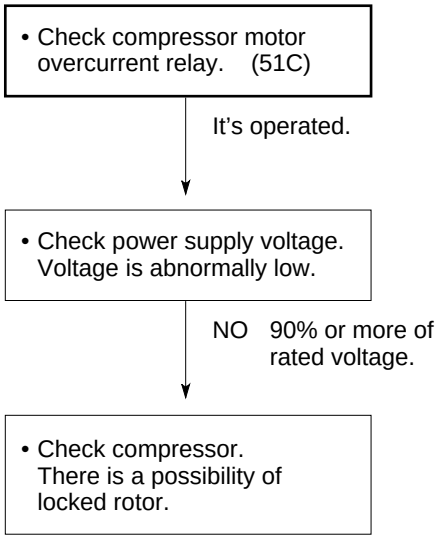
F. Check magnetic contactor.



G. Check indoor PCB Ass'y.

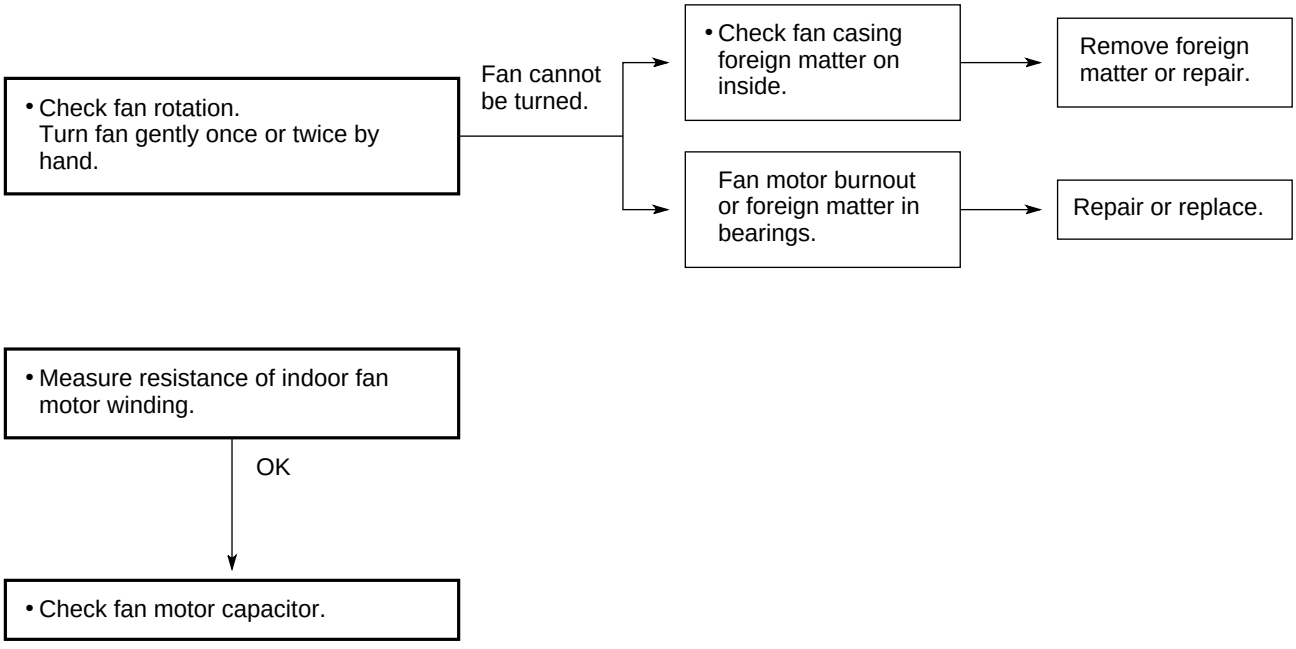
H. Check compressor motor protector.


• Check compressor motor internal protector. (49C)
Temperature of compressor is abnormally high.
YES
NO
Outdoor heat exchanger coil is dirty or there are obstacles near air suction inlet.
Refrigerant gas shortage.
YES
YES
• Clean heat exchanger or remove obstacles.
Charge refrigerant gas.

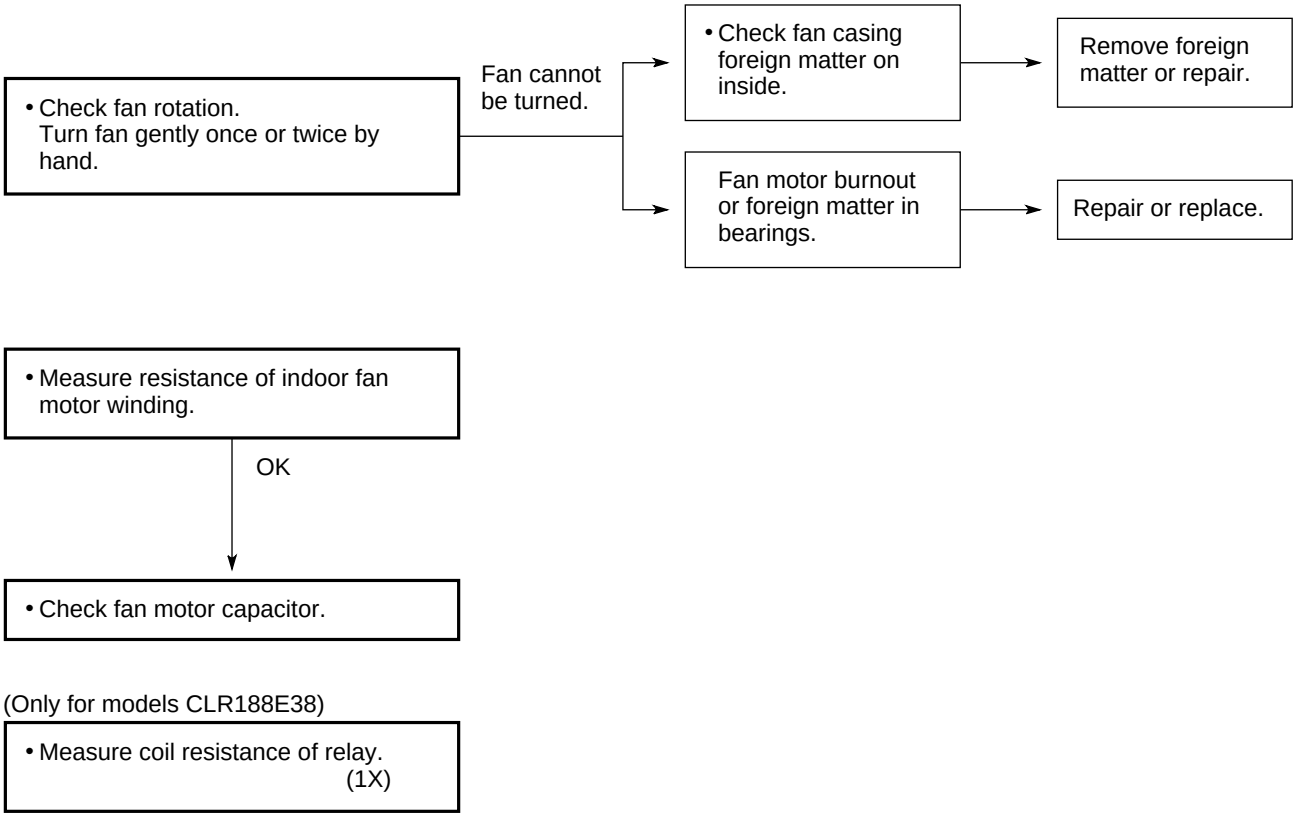

• Check compressor motor overcurrent relay. (51C)
It's operated.
• Check power supply voltage. Voltage is abnormally low.
NO 90% or more of rated voltage.
• Check compressor. There is a possibility of locked rotor.

10-3. Some part of air conditioner does not operate.

10-3-1. Only indoor fan does not run.


• Check fan rotation.
Turn fan gently once or twice by hand.
Fan cannot be turned.
• Check fan casing foreign matter on inside.
Remove foreign matter or repair.
Fan motor burnout or foreign matter in bearings.
Repair or replace.
• Measure resistance of indoor fan motor winding.
OK
• Check fan motor capacitor.

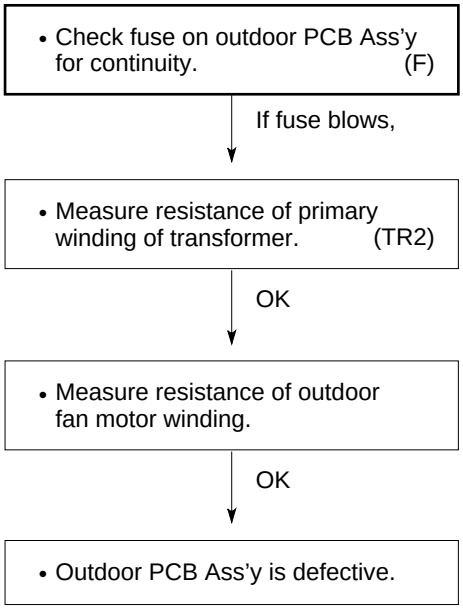
10-3-2. Only outdoor fan does not run.


• Check fan rotation.
Turn fan gently once or twice by hand.
Fan cannot be turned.
• Check fan casing foreign matter on inside.
Remove foreign matter or repair.
Fan motor burnout or foreign matter in bearings.
Repair or replace.
• Measure resistance of indoor fan motor winding.
OK
• Check fan motor capacitor.
(Only for models CLR188E38)
• Measure coil resistance of relay. (1X)

● **Check transformer in outdoor unit.** (AER518SCL3 Only)

- Measure resistance of primary and secondary winding. (TR2)

● **Check fuse on outdoor PCB Ass'y.** (AER518SCL3 Only)


• Check fuse on outdoor PCB Ass'y for continuity. (F)
If fuse blows,
• Measure resistance of primary winding of transformer. (TR2)
OK
• Measure resistance of outdoor fan motor winding.
OK
• Outdoor PCB Ass'y is defective.

10-3-3. Only compressor does not run.

- Measure resistance of compressor motor winding.

10-3-4. Only flap motor does not run

- Measure resistance of flap motor winding. (FLP)

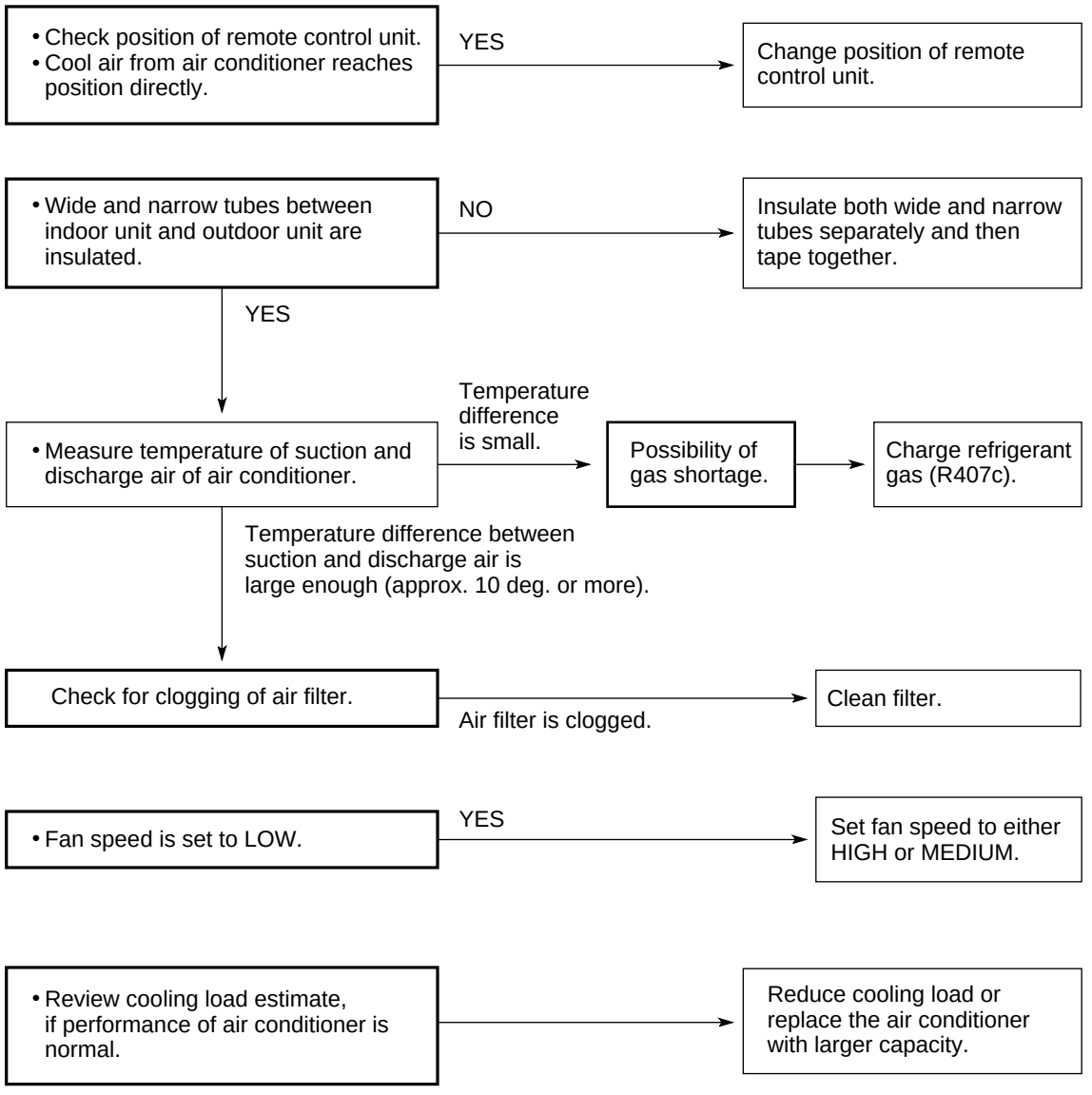
10-3-5. Function of outdoor fan speed control does not work properly.

(For AER518SCL3)

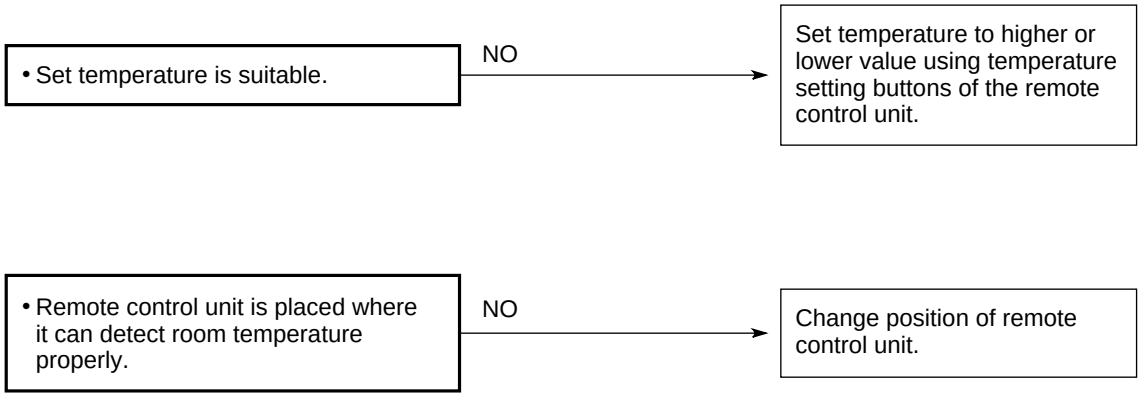
- Check solid state relay in outdoor unit. (SSR)

10-4. Air conditioner operates, but abnormalities are observed.

10-4-1. Poor cooling.


• Check position of remote control unit.
• Cool air from air conditioner reaches position directly.
YES
Change position of remote control unit.
• Wide and narrow tubes between indoor unit and outdoor unit are insulated.
NO
Insulate both wide and narrow tubes separately and then tape together.
YES
• Measure temperature of suction and discharge air of air conditioner.
Temperature difference is small.
Possibility of gas shortage.
Charge refrigerant gas (R407c).
Temperature difference between suction and discharge air is large enough (approx. 10 deg. or more).
Check for clogging of air filter.
Air filter is clogged.
Clean filter.
• Fan speed is set to LOW.
YES
Set fan speed to either HIGH or MEDIUM.
• Review cooling load estimate, if performance of air conditioner is normal.
Reduce cooling load or replace the air conditioner with larger capacity.

10-4-2. Excessive cooling.


• Set temperature is suitable.
NO
Set temperature to higher or lower value using temperature setting buttons of the remote control unit.
• Remote control unit is placed where it can detect room temperature properly.
NO
Change position of remote control unit.

10-5. If a sensor is defective.

10-5-1. Indoor coil temp. thermistor (TH1) is defective.

A. Open

When thermistor opens, the air conditioner will be in the following conditions as the controller tries to detect extremely low indoor coil temperature.

In Cooling mode: Finction of freeze prevention continues to work. That is, the controller turns both compressor and outdoor fan motor periodically ON and OFF for several minutes. (Refer to "5-2. Freeze Prevention")

B. Short

When thermistor is short, the air conditioner will be in the following conditions as the controller tries to detect extremely high indoor coil temperature.

In Cooling mode: Function of freeze prevention will not work even when the frost builds up on indoor heat exchanger coil

10-5-2. Room temp. thermistor (TH2) is defective.

A. Open

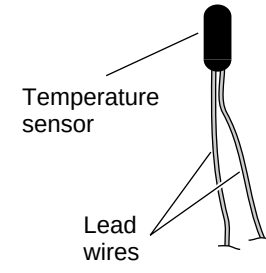
When thermistor opens, the air conditioner will be in the following conditions as the controller tries to detect extremely low room temperature.

In Cooling mode: The air conditioner soon stops and will not start again. (Thermo.OFF)
Neither outdoor fan nor compressor runs.

B. Short

When thermistor is short, the air conditioner will be in the following conditions as the controller tries to detect extremely high room temperature.

In Cooling mode: The air conditioner continues to operate. (Thermo.ON)
Both the outdoor fan and compressor do not stop.
As a result, the room becomes too cold.



Thermistor Structure

NOTE **Definition of Open or Short Circuit of Sensor (Thermistor)**

Open... A lead wire is broken or disconnected or the circuit inside the temperature sensor is open .

Short... The protective cover of a lead wire has been damaged, and the exposed wire is touching another metal part, or both lead wires have become exposed and are touching each other. Alternatively, the circuit inside the temperature sensor is closed.

11. CHECKING ELECTRICAL COMPONENTS

11-1. Measurement of Insulation Resistance

- The insulation is in good condition if the resistance exceeds 2MΩ.

11-1-1. Power Supply Wires

Clamp the ground wire of the power supply wires with the lead clip of the insulation resistance tester and measure the resistance by placing a probe on either of the power wires. (Fig. 1)

Then measure the resistance between the ground wire and the other power wire. (Fig. 1)

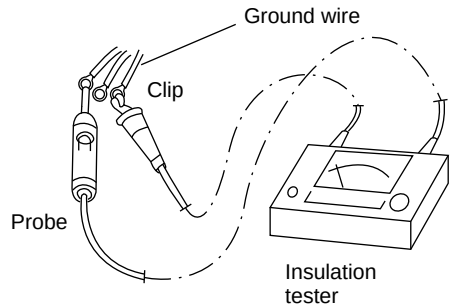


Fig. 1

11-1-2. Indoor Unit

Clamp an aluminum plate fin or copper tube with the lead clip of the insulation resistance tester and measure the resistance by placing a probe on each terminal screw on the terminal plate. (Fig. 2)
Note that the ground line terminal should be skipped for the check.

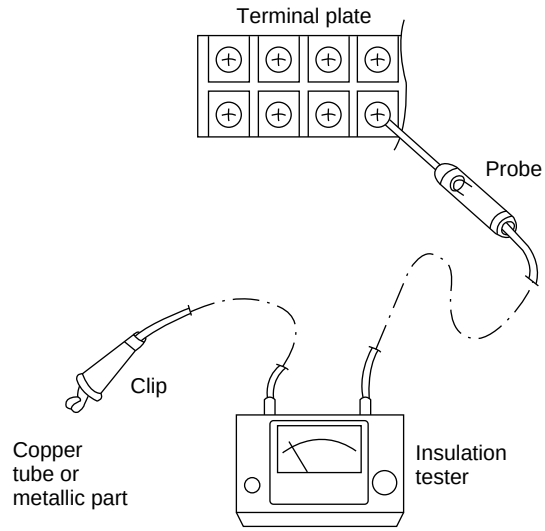


Fig. 2

11-1-3. Outdoor Unit

Clamp an aluminum plate fin or copper tube with the lead clip of the insulation resistance tester and measure the resistance by placing a probe on each terminal screw where power supply lines are connected on the terminal plate. (Fig. 2)

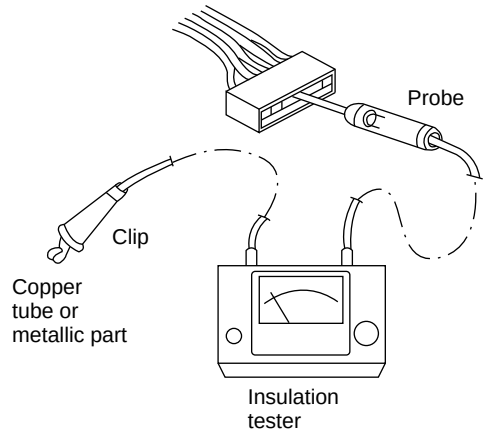


Fig. 3

11-1-4. Measurement of Insulation Resistance for Electrical Parts

Disconnect the lead wires of the desired electric part from terminal plate, capacitor, etc. Similarly disconnect the connector. Then measure the insulation resistance. (Figs. 3 and 4)

NOTE

Refer to Electric Wiring Diagram.

If the probe cannot enter the poles because the hole is too narrow then use a probe with a thinner pin.

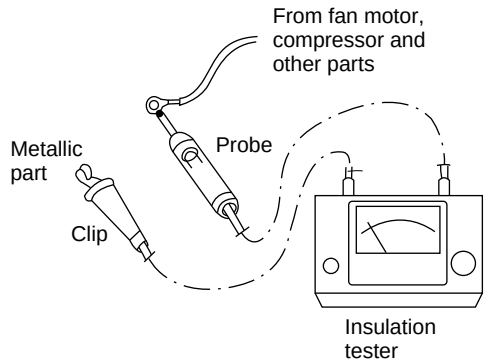


Fig. 4

11-2. Checking Continuity of Fuse on PCB Ass'y

- Remove the PCB Ass'y from the electrical component box. Then pull out the fuse from the PCB Ass'y. (Fig. 5)
- Check for continuity using a multimeter as shown in Fig. 6.

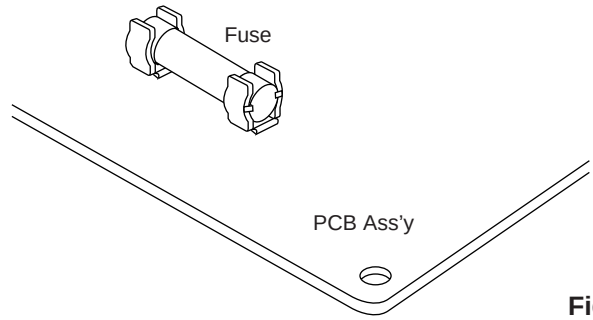


Fig. 5

11-3. Checking Motor Capacitor

Remove the lead wires from the capacitor terminals, and then place a probe on the capacitor terminals as shown in Fig. 7. Observe the deflection of the pointer, setting the resistance measuring range of the multimeter to the maximum value.

The capacitor is "good" if the pointer bounces to a great extent and then gradually returns to its original position.

The range of deflection and deflection time differ according to the capacity of the capacitor.

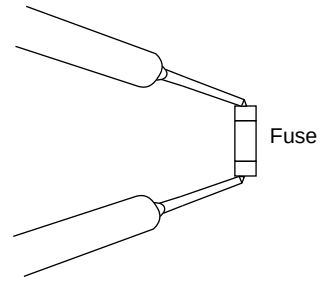


Fig. 6

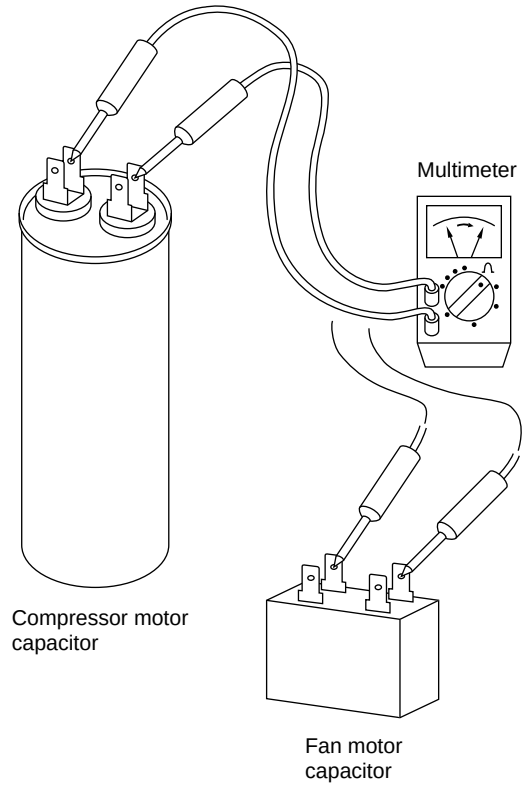


Fig. 7

12. DISASSEMBLY PROCEDURE FOR INDOOR UNIT

IMPORTANT! Please Read Before Starting

Safety precautions for servicing the CEILING-MOUNTED indoor unit

- Before attempting to replace heavy and bulky parts such as the evaporator and fan motor, disconnect the indoor unit from the system and place it on the floor. Refer to the steps given below.
- When checking or servicing the air intake grille, side panels, or electrical component box, first check that power is completely disconnected. Pay utmost care that your working platform is stable enough. Also, do not drop any replaced parts and tools on the floor.

For Floor Installation

12-1. Removing Air Intake Grille

(1) Hold both ends and pull forward to open the air intake grille. (Fig. 1)

(2) Remove the metal clips connecting the unit and the grille. First, with a screwdriver, loosen the * marked screw a little at the right side clip (DO NOT loosen it too much, otherwise, the screw and small metal parts will fall off inside.), then press on the stopper and pull off. (Fig. 2)

(3) Do the same procedure for the left metal clip.

(4) Unlatch the 2 tabs on the lower part of the grille to take it off completely.

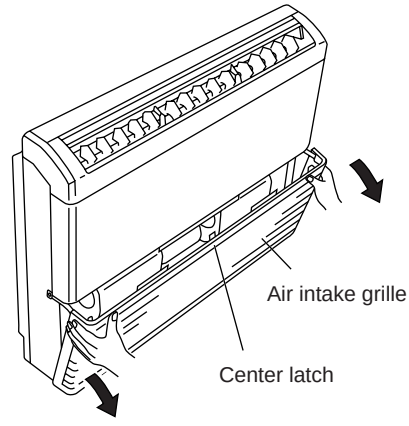


Fig.1

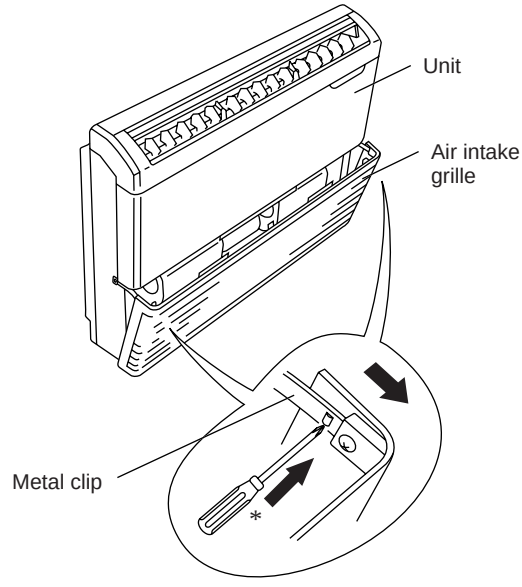


Fig.2

12-2. Removing Side Panels

(1) Remove the 3 screws attaching the left side panel. (Fig. 3)

(2) Note the position of the hook on the inside of the left side panel. To disengage the hook from the slot, slide down the panel for removal. (Fig. 3)

(3) Do the same procedure for the right side panel.

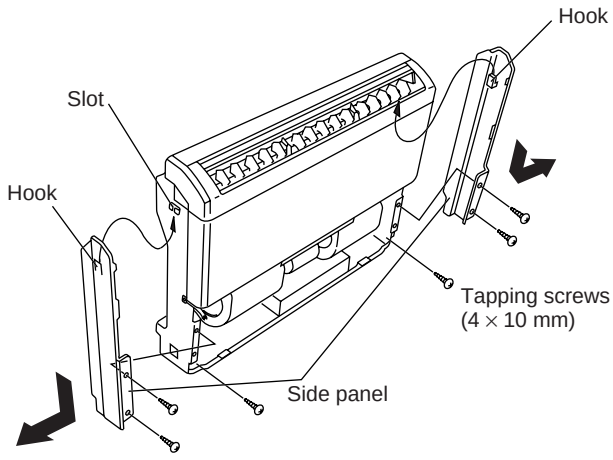


Fig.3

12-3. Access and Removal of Electrical Component Box

WARNING

Hazardous voltage can cause ELECTRIC SHOCK or DEATH. Disconnect the power or turn off circuit breaker before you start checking or servicing.

(1) Remove the front screw with a screwdriver. (Fig. 4)

(2) Slide the lid out and up. (Fig. 4)

(3) Disconnect the wiring as necessary.

(4) Remove the 4 screws, then pull out the electrical component box. (Fig. 5)

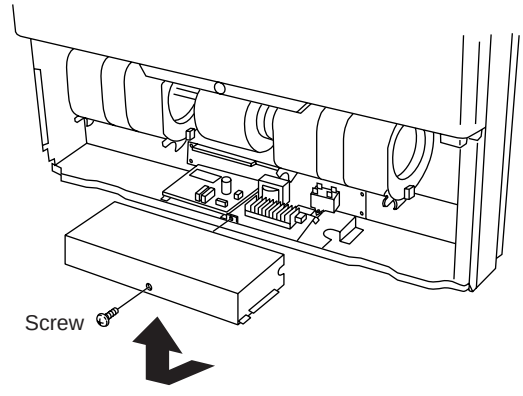


Fig.4

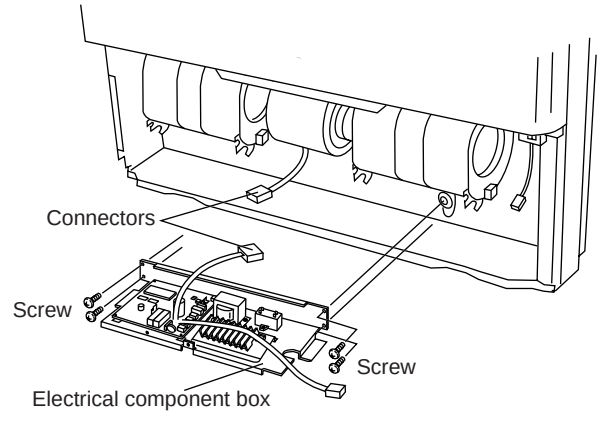


Fig.5

12-4. Removing Flap Motor

(1) Remove the 3 screws used to mount the top panel. (Fig. 6)

(2) While unlatching the 2 tabs inside the back of the top panel, lift the top panel diagonally in the direction of the arrow.(Fig. 6)

(3) Remove the 2 screws to pull off the flap motor. The arm and cam come off together with the motor. (Fig. 7)

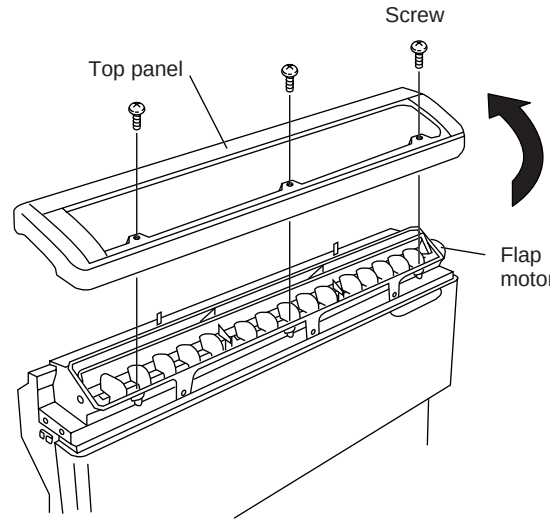


Fig.6

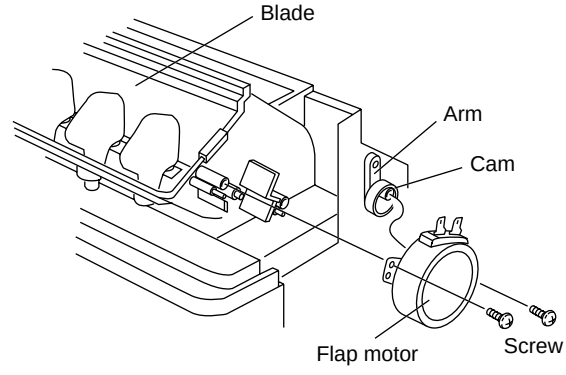


Fig.7

12-5. Removing Evaporator (=Indoor Heat Exchange Coil)

(1) Remove the 7 screws used to mount the blades. (Fig. 8)

(2) Lift the blades in the direction of the arrow.(Fig. 8)

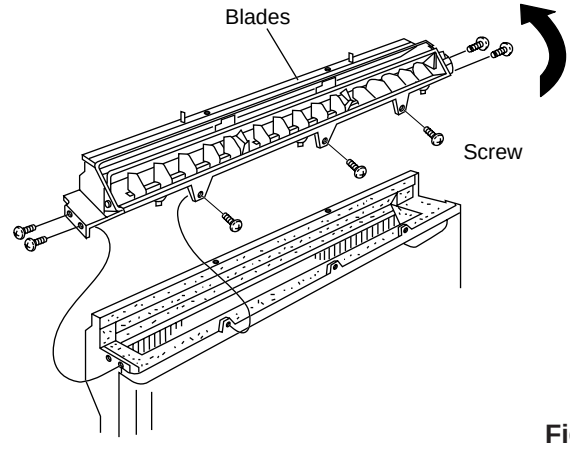


Fig.8

(3) Remove the 6 screws of the front panel and pull it toward you. (Fig. 9)

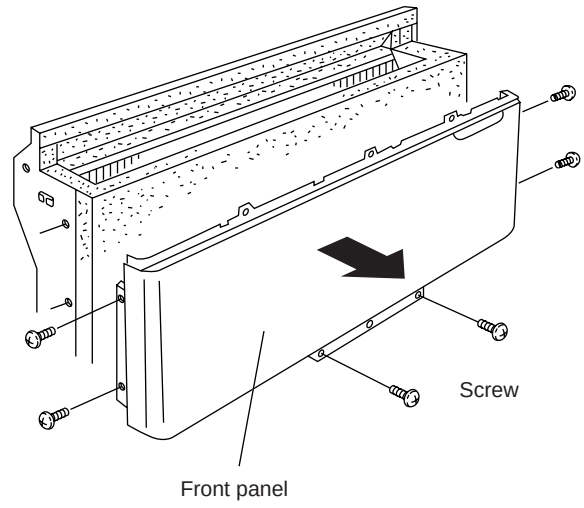


Fig.9

(4) Remove the 2 screws used to mount the evaporator. (Fig. 10)

(5) Remove the rubber cap to pull the thermistor out of the evaporator. (Fig. 10)

(6) Cut the plastic clamp securing the drain hose to the front fan casing. (Fig. 10)

(7) The evaporator is built into the drain pan. Pull out the drain pan together with the evaporator in the direction of the arrow. (Fig. 10)

IMPORTANT

The foamed polystyrene drain pan is fragile: DO NOT apply excessive force when removing it.

(8) The evaporator can be removed by sliding it out from the drain pan in the direction of the arrow. (Fig. 11)

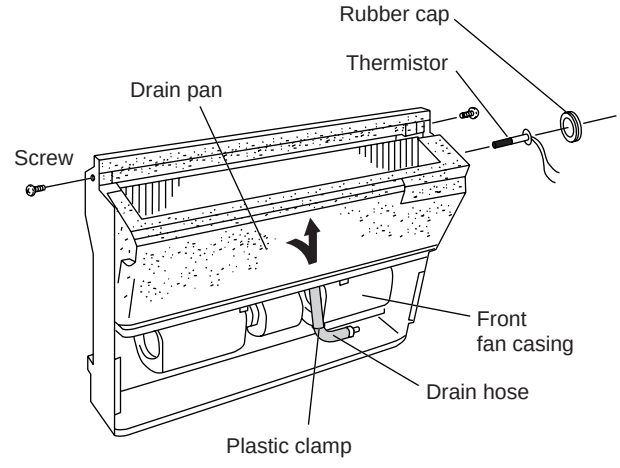


Fig.10

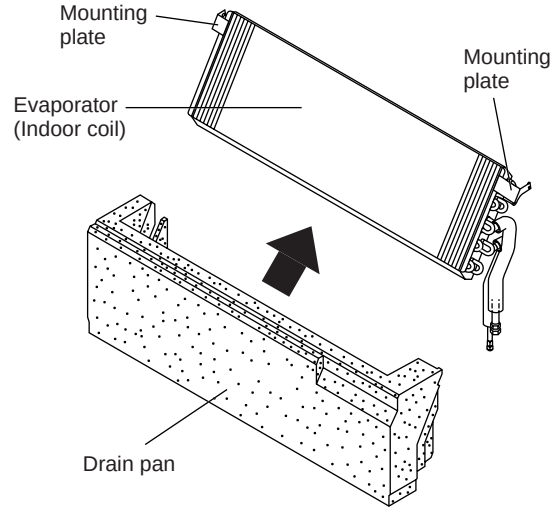


Fig.11

12-6. Removing Fan and Fan Motor

(1) Unlatch the 2 hooks on each side to take off the front fan casing. (Fig. 12)

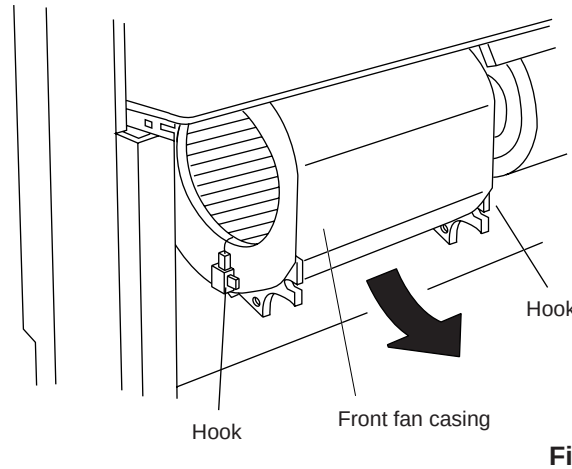


Fig.12

(2) Remove the 2 screws attaching the rear fan casing and then pull the fan casing out.

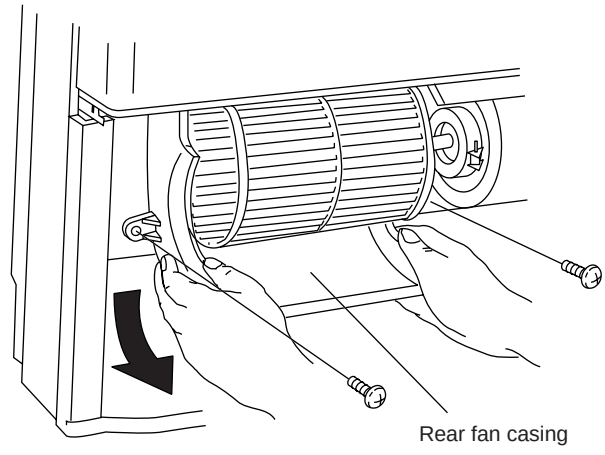


Fig.13

(3) Insert a hex wrench in the fan boss and turn it counterclockwise to loosen the centrifugal fan.

The fan can be removed by sliding it to the left. (Fig. 14)

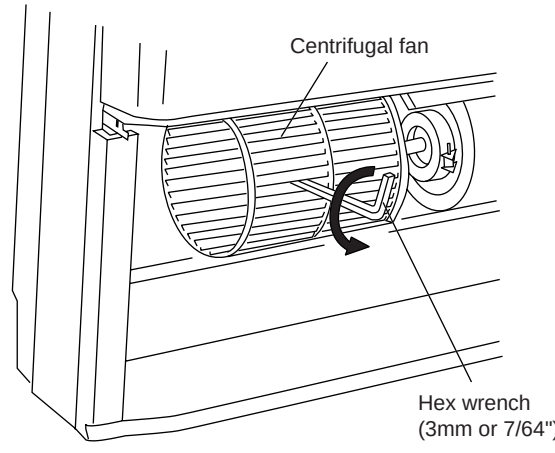


Fig.14

(4) Remove the 4 bolts to remove the fan motor from the frame. (Fig. 15)

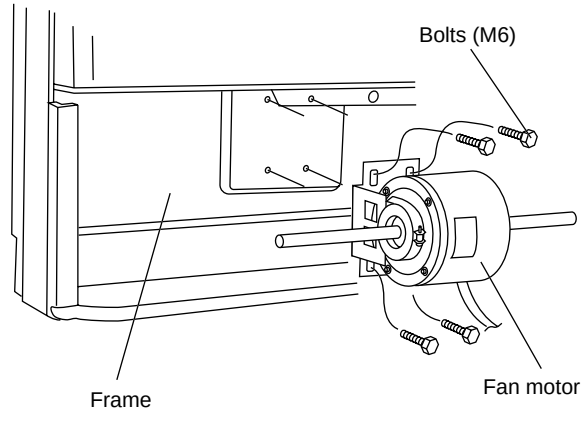


Fig.15

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